

Notice



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☐ SERVICE FLASH ☐ ADD INFORMATION

FILE NO.

Please add this notice to the Service Manual listed below.

REVISION 02

Category : **COLOR TELEVISION**

Date: **SEPTEMBER / 15 / 2003**

Model: **DS32920**

Effective from : Chassis No. **32920-02**

Destination: **U.S.A. / CANADA**

REF : No. **SM780081**

NOTE: Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual.
If the Service Manual Chassis No. does not match the unit's, additional Service Literature is required. This chassis is similar to Chassis No. 32920-00, however, all Service Information is given in this Notice for Chassis No. 32920-02 used in Model DS32920.

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Specifications

Power Rating	120V, 60Hz 100W (Avg), 2.5A (Max)
Antenna Input Impedance	75Ω UHF/VHF/CATV
Receiving Channel	2 - 13 (VHF), 14 - 69 (UHF), 01, 14-94, 95-125 (CATV)
Remote Ready	39 Key Remote Control
Sound Output	3.0 W/CH
Intermediate Frequency	
Picture IF Carrier	45.75MHz
Sound IF Carrier	41.25MHz
Color Sub Carrier	42.17MHz
Picture Tube	A80ERF042X13
Semiconductors	
Integrated Circuits	15
Transistors	50
Except within Tuner and RC Pre-Amp.	
Cabinet Dimensions	
Width	768 mm
Height	732 mm
Depth	577 mm

SAFETY INSTRUCTIONS

SAFETY PRECAUTIONS

WARNING: The chassis of this receiver has a floating ground with the potential of one half the AC line voltage in respect to earth ground. Service should not be attempted by anyone not familiar with the precautions necessary when working on this type of equipment.

The following precautions must be observed:

1. An isolation transformer must be connected in the power line between the receiver and the AC line before any service is performed on the receiver.
2. Comply with all caution and safety-related notes provided on the side of the cabinet, inside the cabinet, on the chassis, and the picture tube.
3. When replacing a chassis in the cabinet, always be certain that all the protective devices are installed properly, such as control knobs, adjustment covers, shields and barriers.

DO NOT OPERATE THIS TELEVISION RECEIVER WITHOUT THE PROTECTIVE SHIELD IN POSITION AND PROPERLY SECURED.

4. Before replacing the back cover of the set, thoroughly inspect the inside of the cabinet to see that no stray parts or tools have been left inside.

Before returning any television to the customer, the service technician must perform the following safety checks to be sure that the unit is completely safe to operate without danger of electrical shock.

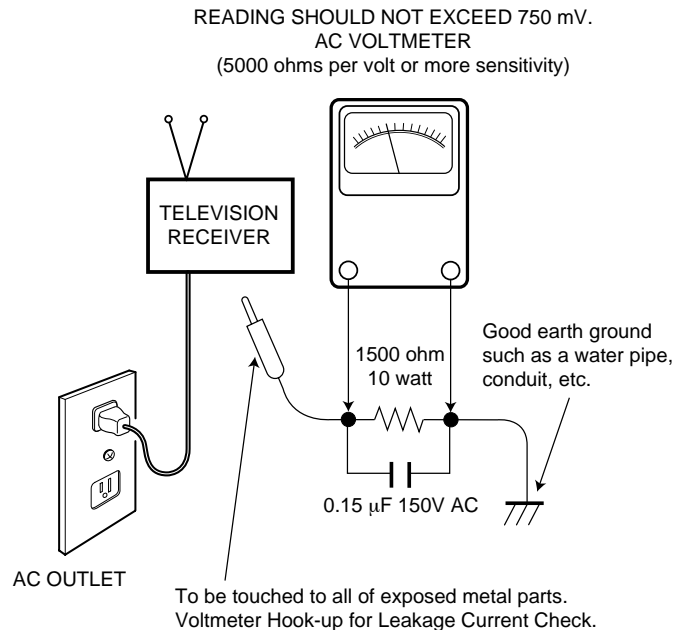
ANTENNA COLD CHECK

Remove AC plug from the 120 VAC outlet and place a jumper across the two blades. Connect one lead of an ohmmeter to the jumpered AC plug, and touch the other lead to each exposed antenna terminal (UHF and VHF antenna terminals). The resistance must measure between 1M ohm and 5.2M ohm. Any resistance value below or above this range indicates an abnormality which requires corrective action.

LEAKAGE CURRENT CHECK

Plug the AC line cord directly into a 120 VAC outlet. (Do not use an isolation transformer for this check.) Use an AC voltmeter, that has 5000 ohms per volt or more sensitivity. Connect a 1500 ohm 10 watt resistor, paralleled by a 0.15 μ F 150 VAC capacitor, between a known good earth ground (water pipe, conduit, etc.) and all exposed metal parts of the cabinet (antennas, handle bracket, metal cabinet, screw heads, metal overlays, control shafts, etc.). Measure the AC voltage across the 1500 ohm resistor. The AC voltage should not exceed 750 mV. A reading exceeding 750 mV indicates that a dangerous potential exists. The fault must be located and corrected. Repeat the above test with the receiver power plug reversed.

NEVER RETURN A RECEIVER TO THE CUSTOMER WITHOUT TAKING THE NECESSARY CORRECTIVE ACTION.



X-RADIATION PRECAUTION

The primary source of X-RADIATION in solid-state receivers is the picture tube. The picture tube is specially constructed to limit X-Ray emission. For continued X-RADIATION protection, the replacement tube must be the same type as the original (including the suffix letter in the part numbers). Excessive high voltage may produce potentially hazardous X-RADIATION. To avoid such hazards, the high voltage must be maintained within specific limits. Refer to the X-RADIATION WARNING NOTE on the CHASSIS SCHEMATIC in this service manual for specific high voltage limits. If the high voltage exceeds specified limits, check the components specified on the chassis schematic diagram and take the necessary corrective action. Carefully follow the instructions for the +B Voltage Check and the High Voltage Check to maintain the high voltage within the specified limits.

HIGH VOLTAGE HOLD-DOWN TEST

To prevent X-RADIATION from the picture tube due to excessive high voltage, a HOLD-DOWN circuit is provided in the high voltage circuit. Every time the receiver is serviced, the high voltage HOLD-DOWN circuit must be tested for proper operation. Refer to the HIGH VOLTAGE HOLD-DOWN TEST in service adjustments.

PRODUCT SAFETY NOTICE

When replacing components in a receiver, always keep in mind the necessary product safety precautions. Pay special attention to the replacement of components marked with a star (★) in the parts list and in the schematic diagrams. To ensure safe product operation, it is necessary to replace those components with the exact same PARTS.

SERVICE ADJUSTMENTS

GENERAL

This set has an on-screen Service Menu system included in the CPU that allows remote operation for most of the service adjustments. To enter the Service Menu, first disconnect the AC power cord. Then while pressing the MENU key on the **front control panel**, reconnect the AC power cord. The adjustments can now be made with the remote control or front control panel keys.

ON-SCREEN SERVICE MENU SYSTEM

1. Enter the Service Menu:

- While pressing the MENU key on the **front control panel**, reconnect the AC power cord. The Service Menu Display will now appear. See Figure 1.

2. Service Adjustments:

- Press the ▲ or ▼ key to select the desired service menu item you want to adjust. (See page 5 for On-screen Service Menu.)
- Use the + or – key or number keys to adjust the data.
The + or – keys will increase or decrease the data sequentially.
The number keys (0 ~ 7) toggle only their respective bits between 1 and 0 and are used to change the Sub-Address. For example to change bit 5 press the number 5 key. See below.

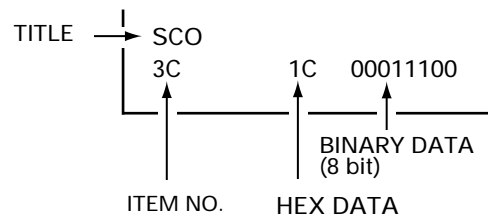
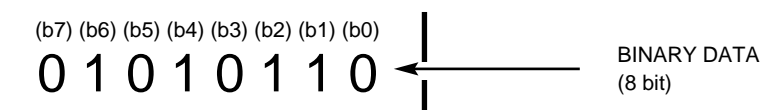


Figure 1. Service Menu Display



3. Exit from the Service Menu:

- Press the MENU key to turn off the Service Menu display.

IC802 (EEPROM) REPLACEMENT

When IC802 (EEPROM) is replaced, IC801 (CPU) will automatically write the initial reference data into IC802 for basic TV operation. However, the bus data should be checked and some bus data should be set up before attempting the service adjustments. (See pages 5 – 7, Table 1, for detailed bus data information.)

INITIAL BUS DATA SETUP

Note: When IC802 (EEPROM) is replaced, change the following initial reference data for proper TV operation before attempting service adjustments.

1. Disconnect the AC power cord (AC 120V line).
2. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
3. Select NO. 3C SCO (Sub Color) with ▲ or ▼ key. Adjust the data with + or – key for 25.
4. Select NO. 3D STI (Sub Tint) with ▲ or ▼ key. Adjust the data with + or – key for 0C.
5. Select NO. 3F SSH (Sub Sharpness) with ▲ or ▼ key. Adjust the data with + or – key for 05.
6. Select NO. 40 AFC6HFR (AFC / H Frequency) with ▲ or ▼ key. Adjust the data with number keys for BF.
7. Select NO. 41 VTR7HP (V Trans / H Phase) with ▲ or ▼ key. Adjust the data with + or – key for 12.
8. Select NO. 42 VS (V Size) with ▲ or ▼ key. Adjust the data with + or – key for 2F.
9. Select NO. 43 VSP7VPO (V Sync Sep / V Position) with ▲ or ▼ key. Adjust the data with number keys for 20.
10. Select NO. 44 CDM5UVL (V Count Dn Mode / V Lin Top) with ▲ or ▼ key. Adjust the data with number keys for 0F.
11. Select NO. 45 VC5LVL (V Compresion / V Lin Bottom) with ▲ or ▼ key. Adjust the data with number keys for 4A.
12. Select NO. 46 VSC (V S Correction) with ▲ or ▼ key. Adjust the data with + or – key for 0C.
13. Select NO. 4A RD (Red Drive) with ▲ or ▼ key. Adjust the data with + or – key for 3A.
14. Select NO. 4C BD (Blue Drive) with ▲ or ▼ key. Adjust the data with + or – key for 3A.
15. Select NO. 4D SBI (Sub Bias) with ▲ or ▼ key. Adjust the data with + or – key for 1C.
16. Select NO. 50 OSD (On Screen Display Contrast) with ▲ or ▼ key. Adjust the data with + or – key for 0A.
17. Select NO. 54 FLS (Y/C Filter Mode) with ▲ or ▼ key. Adjust the data with + or – key for 83.
18. Select NO. 57 YGM6DCR4BSS2BSG (Y Gamma / DC Reset / Black Streak Start / Black Streak Gain) with ▲ or ▼ key. Adjust the data with number keys for 61.

SERVICE ADJUSTMENTS (Cont.)

INITIAL BUS DATA SETUP (Cont.)

19. Select NO. 58 AFC7CBP5 (Auto Flesh / C Band Pass Filter) with ▲ or ▼ key. Adjust the data with number keys for C0.
20. Select NO. 59 DIG6ABL5MSD4BAT (OSD D/A / ABL Defeat / Mid Stop / ABL Threshold) with ▲ or ▼ key. Adjust the data with numbers key for 64.
21. Select NO. 5A RYA (R-Y/B-Y Angle) with ▲ or ▼ key. Adjust the data with + or – key for 00.
22. Select NO. 5F VL5BPF (Video Level / S BPF Sw) with ▲ or ▼ key. Adjust the data with + or – key for 80.
23. Select NO. 60 EWD (E/W DC) with ▲ or ▼ key. Adjust the data with + or – key for 2B.
24. Select NO. 61 EWA (E/W Amp) with ▲ or ▼ key. Adjust the data with + or – key for 24.
25. Select NO. 62 EWT (E/W Tilt) with ▲ or ▼ key. Adjust the data with + or – key for 22.
26. Select NO. 63 EWB4EWP (E/W Corner Btm / E/W Corner Top) with ▲ or ▼ key. Adjust the data with number keys for BA.
27. Select NO. 64 EWC7HLV6HSC (E/W Cor Sw / H Lock V Det / H Size Comp) with ▲ or ▼ key. Adjust the data with number keys for 02.
28. Select NO. 65 BOW4ANG (Bow Correct / Angle Correct) with ▲ or ▼ key. Adjust the data with number keys for 86.
29. Select NO. 66 PRE6OVR4CTT (Pre Shoot Adj / Over Shoot Adj / Chroma Trap Test) with ▲ or ▼ key. Adjust the data with number keys for 20.
30. Select NO. 67 HBL4HBR (H Blanking L / H Blanking R) with ▲ or ▼ key. Adjust the data with number keys for 2A.
31. Select NO. 6A YTH2YGA (Y TH / Y Gain) with ▲ or ▼ key. Adjust the data with number keys for 0D.
32. Select NO. 6B RWD6ROF4BWD2BOF (R Width / R Offset / B Width / B Offset) with ▲ or ▼ key. Adjust the data with number keys for 10.
33. Select NO. 83 OPT (Asp Ratio / Comb F / Clock / Scan Veloc) with ▲ or ▼ key. Adjust the data with number keys for 3C.
34. Select NO. 84 OP2 (V Guide / Tone / AV / PIP / F/V / I-Ch / C En / C En Select) with ▲ or ▼ key. Adjust the data with number keys for 2E.
35. Select NO. 8D HR (H Display Position) with ▲ or ▼ key. Adjust the data with + or – key for 1C.
36. Select NO. 8E SBO (Sub Bright Offset) with ▲ or ▼ key. Adjust the data with + or – key for 00.
37. Select NO. 92 DTN (YUV Sub Tint) with ▲ or ▼ key. Adjust the data with + or – key for FC.
38. Select NO. 96 DCB (YUV Cb Offset) with ▲ or ▼ key. Adjust the data with + or – key for 00.
39. Select NO. 97 DCR (YUV Cr Offset) with ▲ or ▼ key. Adjust the data with + or – key for 00.
40. Select NO. 9A ECN (16:9 Sub Contrast) with ▲ or ▼ key. Adjust the data with + or – key for F0.
41. Select NO. 9B EBR (16:9 Sub Bright) with ▲ or ▼ key. Adjust the data with + or – key for FB.
42. Select NO. 9E EVS (16:9 Sub V Size) with ▲ or ▼ key. Adjust the data with + or – key for F5.
43. Select NO. A0 EEA(16:9 Sub E/W Amp) with ▲ or ▼ key. Adjust the data with + or – key for EF.
44. Select NO. A1 EET (16:9 Sub E/W Tilt) with ▲ or ▼ key. Adjust the data with + or – key for FF.
45. Select NO. A2 EEP (16:9 Sub E/W Corner Top) with ▲ or ▼ key. Adjust the data with + or – key for FC.
46. Select NO. A3 EEB (16:9 Sub E/W Corner Bottom) with ▲ or ▼ key. Adjust the data with + or – key for FD.
47. Select NO. A4 EUV (16:9 Sub V Lin Top) with ▲ or ▼ key. Adjust the data with + or – key for FD.
48. Select NO. A5 ELV (16:9 Sub V Lin Bottom) with ▲ or ▼ key. Adjust the data with + or – key for 03.
49. Select NO. AB VFL (Filter System AVt) with ▲ or ▼ key. Adjust the data with + or – key for 04.
50. Press the MENU key to turn off the Service Menu display.

Table 1. ON-SCREEN SERVICE MENU

When IC802 (EEPROM) is replaced, check the bus data to confirm they are the same as below. The shaded menu should be checked and be set up or readjusted according to the procedures described in the following pages. Initial Setup Data marked with an * should be changed from Initial Reference Data. (See pages 3 and 4 for Initial Bus Data Setup.)

No.	TITLE	INITIAL REFERENCE DATA HEX	INITIAL SETUP DATA HEX	INITIAL SETUP DATA BINARY	FUNCTION
3C	SCO	0F	25*	00011011	Sub Color
3D	STI	15	0C*	00001110	Sub Tint
3E	SB	20	20	00100000	Sub Bright
3F	SSH	08	05*	00000101	Sub Sharpness
40	AFC6HFR	A5	BF*	10111111	AFC(6) Horizontal Frequency
41	VTR7HP	0C	12*	00001111	Vertical Trans(7) Horizontal Phase
42	VS	40	2F*	00111110	Vertical Size
43	VSP7VPO	2A	20*	00101111	Vertical Sync Separator(7) Vertical Position
44	CDM5UVL	06	0F*	00001011	Vertical Count Down Mode(5) Vertical Linearity Top
45	VC5LVL	9E	4A*	01001101	Vertical Compression(5) Vertical Linearity Bottom
46	VSC	14	0C*	00010010	Vertical S Correction
47	RB	00	00	00000000	Red Bias
48	GB	00	00	00000000	Green Bias
49	BB	00	00	00000000	Blue Bias
4A	RD	38	3A*	00111010	Red Drive
4B	HT5HTD4GD	37	37	00110111	Half Tone(6~5) Half Tone Defeat(4) Green Drive
4C	BD	38	3A*	00111010	Blue Drive
4D	SBI	30	1C*	00010111	Sub Bias
4E	↓	↓	↓	↓	Not Used
4F	↓	↓	↓	↓	Not Used
50	OSD	07	0A*	00001010	On Screen Display Contrast
51	CRG6	80	80	10000000	Coring
52	↓	↓	↓	↓	Not Used
53	↓	↓	↓	↓	Not Used
54	FLS	84	83*	10000011	Y/C Filter Mode
55	GRY7CRS5GYA3CKO	03	03	00000011	Gray(7) Cross B/W(6~5) G-Y Angle(4) Color Killer
56	FBP6YAP4WHP	42	42	01000001	FBP Blanking(6) Y APF(4) White Peak
57	YGM6DCR4BSS2BSG	A5	61*	01100001	Y Gamma(7~6) DC Reset(5~4) B Strk Start(3~2) B Strk Gain
58	AFC7CBP5	40	C0*	11000000	Auto Flesh(7) Color Band Pass Filter(5)
59	DIG6ABL5MSD4BAT	44	64*	01100100	OSD D/A(6) ABL Defeat(5) Mid Stop(4) ABL Threshold
5A	RYA	0B	00*	00000000	R-Y/B-Y Angle
5B	CBO4CRO	88	88	10001000	Cb DC Offset(7~4) Cr DC Offset
5C	↓	↓	↓	↓	Not Used
5D	STS7RAD	20	20	00100000	S Trap Switch(7) RF AGC Delay
5E	FMM7VIF4IAS	00	00	00000000	FM Mute(7) VIF System Switch(4) IF AGC
5F	VL5BPF	A0	80*	10000000	Video Level(7~5) S BPF Switch
60	EWD	28	2B*	00011000	E/W DC
61	EWA	17	24*	00010100	E/W Amp
62	EWT	1D	22*	00100001	E/W Tilt
63	EWB4EWP	88	BA*	10111001	E/W Corner Bottom(7~4) E/W Corner Top
64	EWC7HLV6HSC	03	02*	00000101	E/W Correction Sw(7) H Lock V Det(6) H Size Comp
65	BOW4ANG	78	86*	10011001	Bow Correction(7~4) Angle Correction
66	PRE6OVR4CTT	C0	20*	00100000	Preshoot Adj(7~6) Overshoot Adj(5~4) Chroma Trap Test
67	HBL4HBR	38	2A*	00111010	H Blanking Left(7~4) H Blanking Right
68	SSP5VM	90	90	10010000	Sync Sep Sens(7~5) VM Gain
69	VL4	00	00	00000000	V Size 0.75(7) V Blanking Select
6A	YTH2YGA	00	0D*	00001101	Y TH(3~2) Y Gain
6B	RWD6ROF4BWD2BOF	00	10*	00010000	R Width(7~6) R Offset(5~4) B Width(3~2) B Offset
80	ATT	07	07	00000111	Attenuation (MTS Input Level)

SERVICE ADJUSTMENTS (Cont.)

Table 1. ON-SCREEN SERVICE MENU (Continued)

No.	TITLE	INITIAL REFERENCE DATA HEX	INITIAL SETUP DATA HEX	INITIAL SETUP DATA BINARY	FUNCTION
81	WDB	20	20	00100000	Wide Band
82	SPC	20	20	00100000	Spectral
83	OPT	70	3C*	00111100	Aspect Ratio(5) Comb Filter(4) Clock(3) Scan Velocity(2)
84	OP2	52	2E*	00101110	V Guide(7) Tone(6) AV(5) PIP(4) F/V(3) I-Ch(2) C En(1) C En Sel
85	PUV	18	18	00011000	PIP Up Vertical Position
86	PDV	93	93	10010011	PIP Down Vertical Position
87	PLH	0A	0A	00001010	PIP Left Horizontal Position
88	PRH	65	65	01100101	PIP Right Horizontal Position
89	PCN	2A	2A	00101010	PIP Contrast
8A	PBS	0F	0F	00001111	PIP BG Start
8B	PCO	28	28	00101000	PIP Color
8C	PTI	28	28	00101000	PIP Tint
8D	HR	16	1C*	00011001	H Display Position
8E	SBO	05	00*	00000000	Sub Bright Offset
8F	DCN	00	00	00000000	YUV Sub Contrast
90	DBR	00	00	00000000	YUV Sub Bright
91	DCL	00	00	00000000	YUV Sub Color
92	DTN	00	FC*	11111100	YUV Sub Tint
93	DSP	00	00	00000000	YUV Sub Sharpness
94	DCG	00	00	00000000	YUV Sub Coring
95	DVM	00	00	00000000	YUV Sub VM
96	DCB	02	00*	00000000	YUV Cb Offset
97	DCR	02	00*	00000000	YUV Cr Offset
98	DHC	00	00	00000000	YUV Sub H Phase
99	DHS	00	00	00000000	YUV Sub E/W DC
9A	ECN	F4	FO*	11101001	16:9 Sub Contrast
9B	EBR	00	FB*	11111011	16:9 Sub Bright
9C	ECL	00	00	00000000	16:9 Sub Color
9D	ETN	00	00	00000000	16:9 Sub Tint
9E	EVS	F9	F5*	11110111	16:9 Sub V Size
9F	EVP	00	00	00000000	16:9 Sub V Position
A0	EEA	F5	EF*	11111000	16:9 Sub E/W Amp
A1	EET	FB	FF*	00000010	16:9 Sub E/W Tilt
A2	EEP	00	FC*	11111111	16:9 Sub E/W Corner Top
A3	EEB	FC	FD*	00000000	16:9 Sub E/W Corner Bottom
A4	EUV	FC	FD*	11111110	16:9 Sub V Linearity Top
A5	ELV	00	03*	00000011	16:9 Sub V Linearity Bottom
A6	EWV	02	02	00000010	16:9 V Blanking Select
A7	SSN	02	02	00000010	Sync Separator Sense
A8	CDR	00	00	00000000	TV Count Down Mode
A9	AFR	00	00	00000000	AFC Loop Gain
AA	B16	04	04	00000100	16:9 ABL VTH Sw
AB	VFL	03	04*	00000100	Filter Sys (AV)
AC	VCB	01	01	00000001	C Bypass (AV)
AD	BWD	02	02	00000010	EWD AT AV Blue Back
AF	DRV	R40	R40	01000000	Red Drive Adjustment (See Note 1.)
		R40	R40	01000000	Blue Drive Adjustment (See Note 1.)
	-	-	-	-	Red Bias Adjustment (See Note 2.)
	-	-	-	-	Green Bias Adjustment (See Note 2.)
	-	-	-	-	Blue Bias Adjustment (See Note 2.)

DRIVE AND BIAS ADJUSTMENTS

Note 1.

Red/Blue Drive Adjustments in Service Menu NO. AF DRV: Adjust Red and Blue Drive Levels alternately with 1, 3, 7, and 9 keys on the remote control. See Figure 2. The Drive Level adjustment data will be written in the Service Menu No. 4A RD and 4C BD automatically.

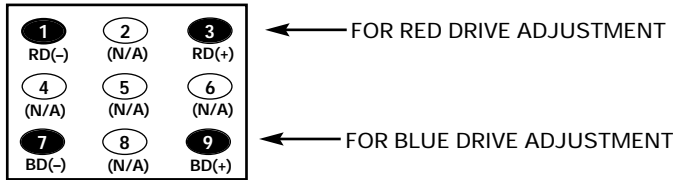


Figure 2.

Note 2.

Red/Green/Blue Bias Adjustments in Service Menu between AF and B0 (No Vertical Sweep): Adjust each Bias Level with 1, 3, 4, 6, 7, or 9 key on the remote control. See Figure 3. The Bias Level adjustment data will be written in the Service Menu No. 47 RB, No. 48 GB, and No. 49 BB automatically.

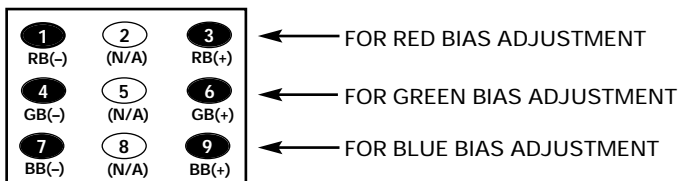


Figure 3.

PROGRAM CODES

The microprocessor used in this model is a multi-purpose type and is used in several different models. To ensure proper operation and the correct features for your particular model, the program codes must be correct.

Note 1. Option Data 1 (NO. 83 OPT) should be hexadecimal 3C (00111100 binary). See page 4 INITIAL DATA SETUP, step 32, for set up procedure. If this program code is wrong the TV will not operate properly.

BIT	FUNCTION	DATA	
		0	1
0 - 1	NOT USED	—	—
2	SCAN VELOCITY	NONE	YES
3	CLOCK	NONE	YES
4	COMB FILTER	NONE	YES
5	WIDE MODE	NONE	YES
6	SURROUND	NONE	YES
7	NOT USED	—	—

Note 2. Option Data 2 (NO. 84 OP2) should be hexadecimal 2E (00101110 binary). See page 4 INITIAL DATA SETUP, step 33, for set up procedure. If this program code is wrong the TV will not operate properly.

BIT	FUNCTION	DATA	
		0	1
0	SHIPPING CONDITION OF COLOR ENHANCER	NORMAL	COOL
1	COLOR ENHANCER	NONE	YES
2	INITIAL CH & XDS	NONE	YES
3	FIXED/VARIABLE	FIXED	FIX/VAR
4	PIP	NONE	YES
5	AV INPUTS	AV1/2	AV1/2/3
6	BASS & TREBLE / TONE	BASS & TR	TONE
7	V-GUIDE	NONE	YES

SERVICE ADJUSTMENTS (Continued)

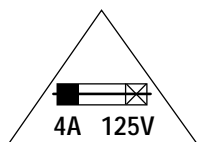
ANTENNA CONNECTIONS

This receiver is designed for UHF/VHF reception. A 75 ohm terminal is provided for UHF and VHF receptions. When connecting a CATV antenna system, connect the 75 ohm coaxial cable directly to the 75 ohm terminal. For 300 ohm VHF antenna, use an adapter (not included with the TV set).

CIRCUIT PROTECTION

Fuse F601 (4A) is included in the AC line. This fuse must be replaced with the proper fuse (see Parts List).

CAUTION



FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.

ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.

+B VOLTAGE CHECK

Connect Voltmeter + lead to TJ1 130V and – lead to ground (TE7). Connect receiver to AC 120V line. Tune receiver to an active channel. Reset the picture controls to the FACTORY PRESET levels (press remote control RESET key twice). Voltage must measure between +128.0V and +132.0V. If the voltage is out of this range, the power circuit must be checked. No +B adjustment is provided on this chassis.

HORIZONTAL WIDTH ADJUSTMENT

1. Tune receiver to an active channel.
2. Check the picture for proper width. If width is not correct, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 60 EWD (Horizontal Width) with ▲ or ▼ key.
6. Adjust the data with + or – key for proper width. To turn off the Service Menu display, press the MENU key.

HORIZONTAL CENTERING ADJUSTMENT

1. Tune receiver to an active channel.
2. Check that picture is in the horizontal center of TV screen. If picture is not centered horizontally, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord.
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 41 VTR7HP (Horiz. Phase) with ▲ or ▼ key.
6. Adjust the data with + or – key for horizontal center. To turn off the Service Menu display, press the MENU key.

VERTICAL SIZE ADJUSTMENT

1. Tune receiver to an active channel.
2. Check the vertical size of the picture. If the vertical size is too large or small, perform steps 3 ~ 6.
3. Turn off the receiver and disconnect the AC power cord.
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 42 VS (Vertical Size) with ▲ or ▼ key.
6. Adjust the data with + or – key for full scan. To turn off the Service Menu display, press the MENU key.

VERTICAL CENTERING ADJUSTMENT

1. Tune receiver to an active channel.
2. Check that picture is in the center of TV screen. If picture center is too low, add resistor R513 (1K ohm 1W). If picture center is too high, add resistor R512 (1K ohm 1/2W).

VCO ADJUSTMENT

Note: VCO must be adjusted after IC101 (Signal Processor), IC802 (EEPROM) or T151 (VCO Coil) is replaced.

1. Tune receiver to an active channel.
2. Set the picture controls to the Sports level.
3. Connect digital voltmeter + lead to pin 58 (TP 10) of IC101 and – lead to ground (TE 7).
4. Confirm a reading of 3.6 ± 0.2 VDC.
5. If voltage is out of specifications adjust T151 for 3.6 ± 0.2 VDC.

RF AGC ADJUSTMENT

1. Tune receiver to strongest VHF station in your area.
2. Set contrast and brightness controls for maximum.
3. Turn off the receiver and disconnect the AC power cord (120V AC line).
4. While pressing the MENU key, reconnect the AC power cord. The Service Menu display will now appear.
5. Select NO. 5D STS7RAD (RF AGC Delay) with ▲ or ▼ key.
6. Adjust the data with + or – key in the direction which causes snow to appear; then in the opposite direction until the snow just disappears.
7. To turn off the Service Menu display, press the MENU key.

VIDEO LEVEL

1. Connect color-bar generator to antenna terminals.
2. Switch the generator to a white field (100 IRE).
3. Set the picture controls to the Sports levels.
4. Connect oscilloscope + lead to terminal TP16 (Q202 Emitter) and – lead to ground.
5. Turn off the receiver and disconnect the AC power cord (AC 120V line).
6. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
7. Select NO. 5F VL5BPF (Video Level) with the ▲ or ▼ key.
8. Adjust the data with the 5 ~ 7 numeric keys for an oscilloscope reading of 1.0 ± 0.1 VP-P at TP16.
- 9 Press the MENU key to turn off the Service Menu display and disconnect oscilloscope from chassis.

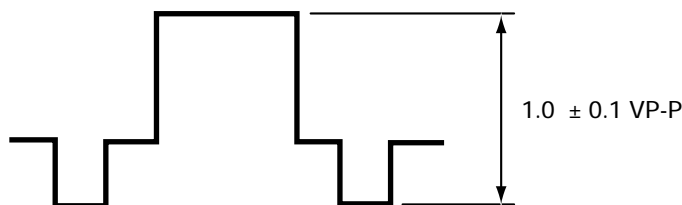


Figure 4.

GRAYSCALE ADJUSTMENT

1. Connect a color-bar generator to the antenna terminals.
2. Switch the generator to the white pattern.
3. Set the picture controls to the Sports level or Reset (use MENU key and ▲ or ▼ key or RESET key).
4. Turn off the receiver and disconnect the AC power cord (120V AC line).
5. While pressing the MENU key, reconnect the AC power-cord. The Service Menu display will now appear.
6. Select NO. 4A RD (Red Drive) and NO. 4C BD (Blue Drive) with ▲ or ▼ key and set each data to 3A with + or – key.
7. Select NO. 47 RB (Red Bias), NO. 48 GB (Green Bias) and NO. 49 BB (Blue Bias) with ▲ or ▼ key and set each data to 00 with + or – key.
8. Set NO. 3C SCO (Sub Color) data to 25, NO. 3D STI (Sub Tint) data to 0C, NO. 3E SB (Sub Bright) data to 20, NO. 3F SSH (Sub Sharpness) data to 05, and NO. 4B GD (Green Drive) data to 37 with ▲ or ▼, and + or – keys.
9. Turn Screen Control (T402) to minimum (fully counter-clockwise).
10. Select the Service Menu Bias Adjustments between AF and B0 (No Vertical Sweep) with ▲ or ▼ key.
11. Advance Screen Control (T402) clockwise to obtain just visible one color line. If line does not appear, place this control to maximum (fully clockwise).
12. Raise each Bias Level with 3, 6, and 9 keys to obtain just visible white line. See Figure 5.

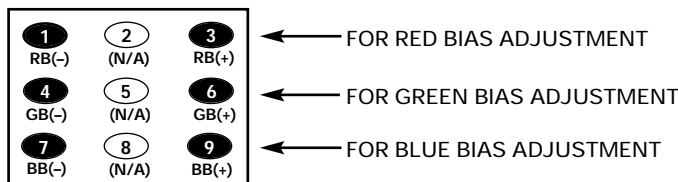


Figure 5. Remote Control Number keys' functions in Bias Adjustment (No Vertical Sweep)

13. Select the Service Menu NO. AF DRV (Drive Adjustments) with ▲ or ▼ key.
14. Adjust Red and Blue Drive Levels alternately with 1, 3, 7, or 9 key to produce normal black and white picture in highlight areas. See Figure 6.

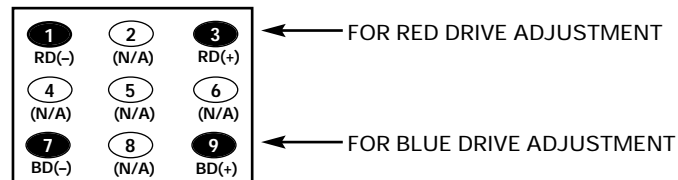


Figure 6. Remote Control Number keys' functions in Service Menu NO. AF DRV

15. Check for proper grayscale at all brightness levels.

Note: If Grayscale Adjustment is made after picture tube replacement, check Brightness Level Adjustment.

BRIGHTNESS LEVEL ADJUSTMENT

Note: Grayscale Adjustment and High Voltage Check must be completed before attempting Brightness Level Adjustment.

1. Connect a color-bar generator to the antenna terminals.
2. Switch the generator to the crosshatch pattern.
3. Reset the picture controls to the Sports level.
4. Connect voltmeter (high impedance) + lead to terminal TP51 and – lead to terminal TP50 on main board. Set voltmeter for 1.5V ~ 3V range.
5. Turn off the receiver and disconnect the AC power cord.
6. While pressing the MENU key, reconnect the AC power-cord. The Service Menu display will now appear.
7. Select NO. 3E SB (Sub Brightness) with ▲ or ▼ key.
8. Adjust the data with + or – key for 680 mVDC.
9. Press the MENU key to turn off the Service Menu display.
10. Check brightness level on every active channel, readjust (repeat steps 5 ~ 9), if necessary.

Note: Do not set to excessive brightness level, otherwise the contrast level will be suppressed.

HIGH VOLTAGE HOLD-DOWN TEST

Every time the receiver is serviced, the HIGH VOLTAGE HOLD-DOWN circuit must be tested for proper operation by following these steps:

1. Connect receiver to 120V AC line. Tune receiver to active channel. Reset the picture controls to the Sports level.
2. Check that the voltage measured between TP7 and TE7 (ground side) is within 16.5 VDC to 21 VDC. If the voltage is out of this range, the Hold-Down Circuit must be checked.
3. Connect a DC Voltage supply to TP7 and TE7 through a 100 ohm 1/4W resistor. Adjust the DC voltage to 23 VDC. The receiver should shutdown, losing raster and sound. Then the receiver should turn off automatically. This reaction indicates that the Hold-Down circuit is functioning properly. If the receiver does not shutdown, a malfunction is indicated and its cause **must** be found and corrected.
4. To obtain picture again, remove the DC Supply and wait a few minutes. Now turn on the receiver.

HIGH VOLTAGE CHECK

Note: +B (+130V) Voltage Check and Grayscale Adjustment must be completed before attempting High Voltage Check.

1. Connect high voltage voltmeter – lead to ground, and connect + lead to anode of picture tube.
2. Tune receiver to an active channel and confirm TV is operating properly.
3. Eliminate the beam current by adjusting the contrast and brightness controls to minimum.
4. Confirm high voltage is within 31.1 KV and 35.6 KV. If reading is not within range, check horizontal circuit.

No high-voltage adjustment is provided on this chassis.

SERVICE ADJUSTMENTS (Continued)

FOCUS ADJUSTMENT

1. Connect a color-bar generator to the antenna terminals and select a crosshatch pattern.
2. Set the picture controls to the Sports level.
3. Select a vertical line at the center of the screen and adjust the H focus control for best focus.
4. Select a horizontal line at the center of the screen and adjust the V focus control for best focus.
5. Repeat steps 3 and 4 for best focus.

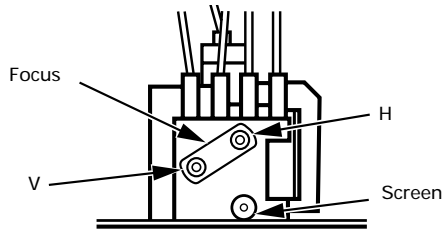
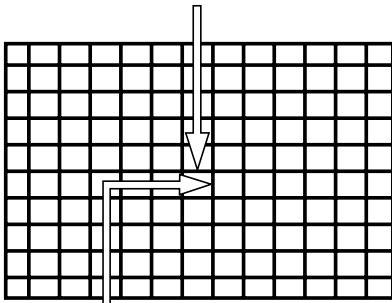


Figure 7. Focus controls locations

Adjust the focus of this line using V focus control.



Adjust the focus of this line using H focus control.

Figure 8. Focus adjustment

PURITY AND CONVERGENCE ADJUSTMENTS

Purity and Convergence have been aligned at the factory. No re-alignment is necessary.

MULTI-SOUND SECTION ADJUSTMENTS

Note: Multi-Sound Section must be adjusted after A101 (U/V Tuner), IC3401 (MTS Decoder), or IC802 (EEPROM) is replaced.

INPUT LEVEL ADJUSTMENT

1. Connect a signal to the antenna terminals with audio of 1 KHz 100% modulation.
2. Turn off the receiver and disconnect the AC power cord (AC 120V line).
3. Connect voltmeter (RMS) to TP317 and ground.
4. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
5. Select NO. 80 ATT (MTS Input Level) with the ▲ or ▼ key.
6. Adjust the + or – key for a voltmeter reading of 400 ± 20 mVrms at TP317.

SEPARATION ADJUSTMENT

7. Turn off the receiver and disconnect the AC power cord (AC 120V line).
8. Connect oscilloscope CH1 to TP317 and CH2 to TP318 and ground.
9. Connect an MTS TV/Stereo generator to antenna terminal.
10. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
11. Select pilot, 300Hz audio frequency and Left modulating signal.
12. Select NO. 81 WDB (Wide Band) with the ▲ or ▼ key.
13. Adjust the + or – key for minimum low frequencies at TP317. See Figure 9.
14. Select 4 KHz audio frequency and Right modulating signal.
15. Select NO. 82 SPC (Spectral) with the ▲ or ▼ key.
16. Adjust the + or – key for minimum high frequencies at TP318. See Figure 9.

Repeat adjustments (steps 11–16) until no further decreases in amplitude can be obtained. Press the MENU key to turn off the Service Menu display.

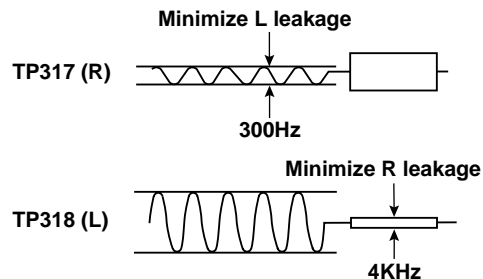
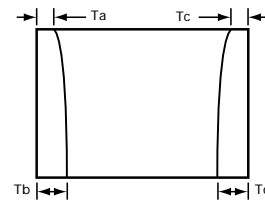


Figure 9. Separation Adjustments

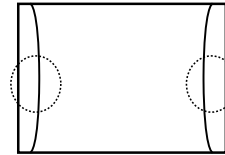
PINCUSHION CORRECTION ADJUSTMENT

1. Connect a color-bar generator to the antenna terminals and select a crosshatch pattern.
2. Set the picture controls to the Sports level.
3. Turn off the receiver and disconnect the AC power cord (AC 120V line).
4. While pressing the Menu key, reconnect the AC power cord. The Service Menu will now appear.
5. Select No. 62 EWT with ▲ or ▼ key and adjust with + or – key for equal tilt at top and bottom. See Figure 10.
6. Select No. 61 EWA with ▲ or ▼ key and adjust with + or – key for straight vertical lines at the center. See Figure 11.
7. Select No. 63 EWB4EWP with ▲ or ▼ key and adjust with + or – key for straight vertical lines at the top. See Figure 12.
8. Select No. 63 EWB4EWP with ▲ or ▼ key and adjust with 4 ~ 7 keys for straight vertical lines at the bottom. See Figure 12.
9. Repeat steps 5 through 8 for best pincushion adjustment.
10. Press the MENU key to turn off the Service Menu display.



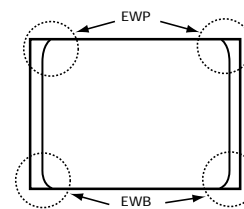
Adjust No. 62 EWT for equal tilt:
 $Ta=Tb, Tc=Td$.

Figure 10.



Adjust No. 61 EWA for the center part of the vertical line to be straight.

Figure 11.



Adjust No. 63 EWP for straight vertical lines at the top. (+ or – keys)
Adjust No. 63 EWB for straight vertical lines at the bottom. (4 ~ 7 keys)

Figure 12.

SERVICE HINTS

POWER FAILURE DETECTOR

This unit is equipped with a Power Failure Detector function included in the CPU which checks for an abnormal condition in the chassis power supplies, including the power supply derived from the Horizontal Output Transformer.

If, while the power is on, a failure is caused by any of the following that results in a low voltage supply, the CPU will turn the unit off in 1.5 seconds to prevent further damage:

- Failure within the power supply circuits.
- A short circuit in the load side from the supply.
- Stoppage of the Horizontal Output Oscillator caused by the X-Radiation protection Hold-Down Circuit.

If, while the power is off, the power is switched on and any of these failures remains uncorrected, the CPU will shut off the power within three seconds.

Check the following if the unit is turned off by the power failure detector.

1. Disconnect the AC power cord (120V AC line) for at least 10 seconds.
2. Connect a DC Voltmeter to the following TEST POINTS.

D508	26V
TJ6	5V
D429 Cathode	8V
D643	12V

3. Press the Power key and check for the proper voltage supplies.
4. If any of these voltages is low, the power failure detector should turn the unit off within three seconds.
5. Check all circuits listed above.

Note: This unit is equipped with a Power Surge Protection feature included in the CPU. If power failure occurs three times within 15 minutes, the CPU will automatically stop functioning to help prevent secondary damage. (TV will not turn on by pressing the power key.) To reset the operating programs within the CPU, disconnect the AC power cord for at least 10 seconds.

MECHANICAL DISASSEMBLIES

CABINET BACK REMOVAL

1. Refer to Figure 1, remove 11 screws.
2. Pull off cabinet back and remove.

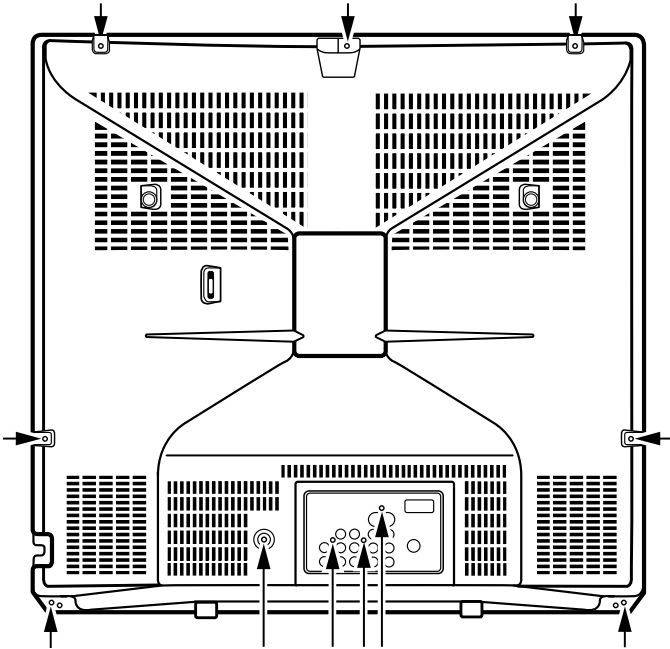


Figure 1. Cabinet Back Removal

CHASSIS REMOVAL

1. Remove cabinet back.
2. Discharge the picture tube anode (2nd anode lead) to the dag coating (picture tube grounding lead).
3. Disconnect degaussing coil socket (KD), picture tube socket, deflection yoke connector (KX), speakers connector (KSP), picture tube ground lead, and 2nd anode lead.
4. Remove chassis completely by sliding it straight back.

PICTURE TUBE REMOVAL

CAUTION: Do not disturb the deflection yoke or magnet assembly on the picture tube neck. Care must be taken to keep these assemblies intact, unless picture tube is being replaced. Discharge the picture tube to the coating before handling the tube.

1. Remove chassis, referring to Chassis Removal instructions.
2. Place cabinet's front face down on a soft surface.
3. Remove the screw on each corner of the picture tube and GENTLY lift the picture tube out of the cabinet.
4. Install a replacement picture tube in reverse order. Properly install the degaussing coil and picture tube grounding lead on the picture tube. See Figure 2.

Note: If Picture Tube is being replaced, mount the Degaussing Coil properly on the tube. See Figure 2.

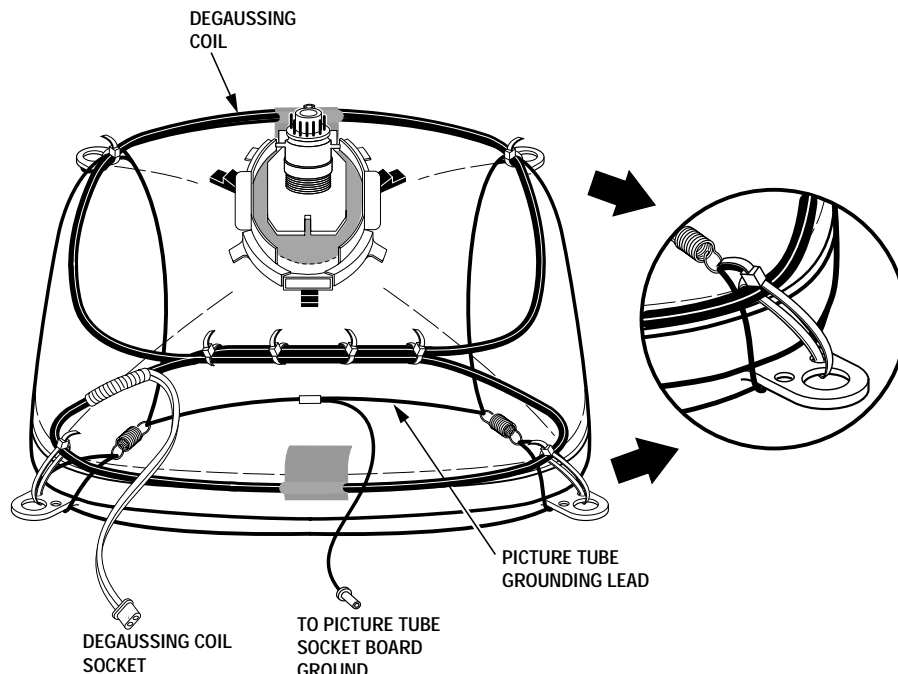


Figure 2. Picture Tube Removal

CHASSIS ELECTRICAL PARTS LIST

CAUTION: To Protect against electrical shock and for continued product safety, refer to **SAFETY PRECAUTIONS**, **X-RADIATION PRECAUTIONS**, **HIGH VOLTAGE HOLD-DOWN TEST**, and **PRODUCT SAFETY NOTICE** on Page 2.

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. COMPONENTS INDICATED BY A STAR (★) IN THIS PARTS LIST AND THE SCHEMATIC DIAGRAM DESIGNATE COMPONENTS IN WHICH SAFETY CAN BE OF SPECIAL SIGNIFICANCE. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS DESIGNATED ON THE FOLLOWING PARTS LIST BE USED FOR COMPONENT REPLACEMENT DESIGNATED BY A STAR. NO DEVIATIONS FROM RESISTANCE, WATTAGE, AND VOLTAGE RATINGS MAY BE MADE FOR REPLACEMENT ITEMS DESIGNATED BY A STAR.

Notes: Parts having Location Number are located on the following boards.

Numbers 300, 1000, 3400 Series On the AV Board and Main Board
 Numbers 400 Series On the PCC Board and Main Board
 Numbers 700 Series On the Picture Tube Socket Board.
 Numbers 900 Series Out of Board.
 Numbers 1700 Series On the Picture Tube Socket Board and Main Board
 Numbers 8800 Series On the PCC Board
 All Other Numbers On the Main Board

Note: Schematic part location numbers may not always match with the part descriptions.
 The part descriptions are correct and should be used.

Schematic Location	Part No.	Description
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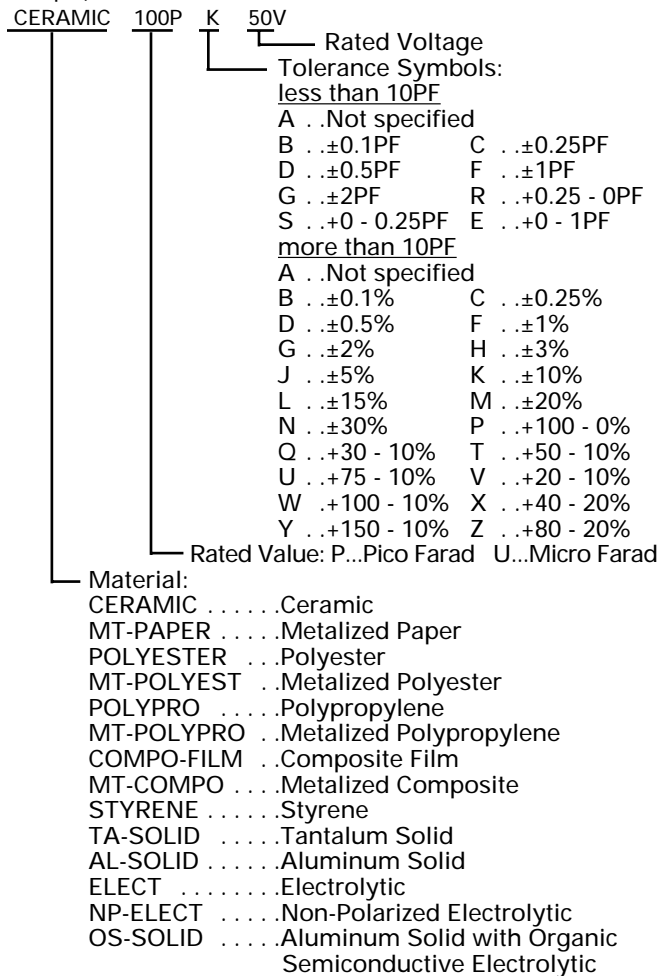
Schematic Location	Part No.	Description
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CAPACITORS

NOTES:

Read description of the Capacitor as follows:

(Example)



C001	404 084 3801	ELECT	1U M	50V
C002	404 084 3801	ELECT	1U M	50V
C005	404 087 1200	ELECT	0.1U M	50V
C007	404 089 2700	ELECT	100U M	25V
C008	403 224 6009	CERAMIC	4700P K	50V
C009	403 224 6009	CERAMIC	4700P K	50V
C010	404 084 3306	ELECT	470U M	16V
C011	404 084 3306	ELECT	470U M	16V
C015	404 087 2306	ELECT	220U M	25V
C017	403 357 9601	CERAMIC	0.1U Z	50V
C101	404 084 2200	ELECT	100U M	6.3V
C106	404 084 4105	ELECT	3.3U M	50V
C103	403 224 6108	CERAMIC	0.01U K	50V
C128	404 084 2705	ELECT	10U M	16V
C130	403 224 5705	CERAMIC	1000P K	50V
C131	404 084 3801	ELECT	1U M	50V
C133	403 224 6108	CERAMIC	0.01U K	50V
C134	403 235 5404	CERAMIC	1500P K	50V
C137	403 364 7508	CERAMIC	10P J	50V
C142	403 343 4603	CERAMIC	0.022U K	50V
C143	403 224 6108	CERAMIC	0.01U K	50V
C146	403 224 6108	CERAMIC	0.01U K	50V
C147	404 084 2200	ELECT	100U M	6.3V
C151	404 084 3702	ELECT	0.47U M	50V
C153	404 084 3702	ELECT	0.47U M	50V
C161	403 357 9601	CERAMIC	0.1U Z	50V
C211	403 069 8305	CERAMIC	0.01U Z	50V
C212	404 084 4006	ELECT	2.2U M	50V
C221	404 084 6901	NP-ELECT	1U M	50V
C247	401 150 6001	MT-GLAZE	0.000 ZA	1/10W
C252	403 057 3107	POLYESTER	0.1U K	50V
	403 311 8909	POLYESTER	0.1U K	50V
	404 084 5102	POLYESTER	0.1UK	63V

Schematic Location	Part No.	Description		
C253	404 084 3702	ELECT	0.47U M	50V
C256	404 084 3801	ELECT	1U M	50V
C257	403 224 6108	CERAMIC	0.01U K	50V
C258	404 087 0500	ELECT	220U M	10V
C271	404 087 0500	ELECT	220U M	10V
C272	404 084 4105	ELECT	3.3U M	50V
C284	404 084 3207	ELECT	47U M	16V
C285	403 224 6108	CERAMIC	0.01U K	50V
C301	404 084 2705	ELECT	10U M	16V
C302	404 084 2705	ELECT	10U M	16V
C303	403 357 9601	CERAMIC	0.1U Z	50V
C306	403 357 9601	CERAMIC	0.1U Z	50V
C307	404 084 2804	ELECT	100U M	16V
C308	403 319 4804	CERAMIC	0.22U Z	16V
C309	403 357 9304	CERAMIC	560P J	50V
C310	403 224 5507	CERAMIC	22P J	50V
C311	404 084 3207	ELECT	47U M	16V
C312	403 357 9601	CERAMIC	0.1U Z	50V
C313	403 086 2607	NP-ELECT	1U M	50V
C314	403 357 9601	CERAMIC	0.1U Z	50V
C315	403 235 0102	CERAMIC	39P J	50V
C316	403 357 9601	CERAMIC	0.1U Z	50V
C317	403 357 9601	CERAMIC	0.1U Z	50V
C318	403 234 9304	CERAMIC	8P D	50V
C319	403 357 9601	CERAMIC	0.1U Z	50V
C320	403 319 4804	CERAMIC	0.22U Z	16V
C322	403 357 9601	CERAMIC	0.1U Z	50V
C323	403 086 2607	NP-ELECT	1U M	50V
C324	404 084 3801	ELECT	1U M	50V
C326	403 357 9601	CERAMIC	0.1U Z	50V
C331	403 235 0102	CERAMIC	39P J	50V
C332	403 234 9304	CERAMIC	8P D	50V
C401	404 084 3009	ELECT	220U M	16V
C402	403 224 6108	CERAMIC	0.01U K	50V
C403	403 062 9309	POLYESTER	6800P J	50V
	403 312 2708	POLYESTER	6800P J	50V
	404 086 6800	POLYESTER	6800P J	63V
C405	404 084 6901	NP-ELECT	1U M	50V
★ C406	403 076 3607	CERAMIC	470P K	500V
★ C407	403 076 0507	CERAMIC	2200P K	500V
C408	403 103 0005	ELECT	4.7U M	160V
★ C411	403 353 4204	MT-POLYPRO	6500P H	1.5K
	404 076 5509	MT-POLYPRO	6500P H	1.5K
★ C412	403 369 5103	MT-POLYPRO	6200P H	1.5K
	404 086 0303	MT-POLYPRO	6200P H	1.5K
★ C413	403 083 3201	POLYPRO	0.012U J	400V
★ C414	403 083 3409	POLYPRO	0.015U J	400V
★ C416	403 358 7200	MT-POLYPRO	0.15U J	250V
	403 372 6302	MT-POLYPRO	0.15U J	250V
	403 375 0604	MT-POLYPRO	0.15U J	250V
★ C417	403 346 6723	MT-POLYPRO	0.18U J	250V
	403 372 1604	MT-POLYPRO	0.18U J	250V
	403 372 6401	MT-POLYPRO	0.18U J	250V
★ C419	403 158 9107	MT-POLYEST	2.2U K	100V

Schematic Location	Part No.	Description		
C421	404 091 6406	ELECT	220U M	6.3V
C422	403 066 6106	MT-POLYEST	0.47U J	250V
C427	403 224 6108	CERAMIC	0.01U K	50V
★ C436	403 324 3106	CERAMIC	820P K	3K
★ C437	403 076 4000	CERAMIC	4700P K	500V
C441	403 082 7705	POLYPRO	0.018U J	200V
C445	404 087 2207	ELECT	22U M	25V
C462	403 235 0607	CERAMIC	100P J	50V
C463	403 057 7709	POLYESTER	0.012U K	50V
	403 311 9302	POLYESTER	0.012U K	50V
	404 086 5308	POLYESTER	0.012U K	63V
C472	403 057 2100	POLYESTER	0.1U J	50V
	403 057 3107	POLYESTER	0.1U K	50V
	403 067 5603	MT-COMPO	0.1U J	50V
	403 166 6808	MT-POLYEST	0.1U J	63V
C479	403 073 8308	CERAMIC	4700P K	50V
C482	404 084 4709	ELECT	47U M	100V
C484	404 084 4204	ELECT	4.7U M	50V
★ C486	403 076 3607	CERAMIC	470P K	500V
★ C487	404 087 3402	ELECT	1000U M	35V
C489	404 084 3306	ELECT	470U M	16V
C493	404 056 5307	NP-ELECT	2.2U M	100V
C497	404 084 2200	ELECT	100U M	6.3V
C502	403 053 2104	ELECT	220U M	35V
C503	403 276 0208	ELECT	2.2U K	50V
C504	403 045 9807	ELECT	2200U M	25V
C505	403 256 0808	MT-COMPO	0.47U J	50V
C505	404 084 5706	MT-POLYEST	0.47UJ	63V
C506	403 059 0104	POLYESTER	0.018U K	50V
	403 312 0100	POLYESTER	0.018U K	50V
	404 084 5201	POLYESTER	0.018UK	63V
C508	403 026 0809	CERAMIC	47P J	50V
C509	403 256 0808	MT-COMPO	0.47U J	50V
	404 084 5706	MT-POLYEST	0.47UJ	63V
★ C511	403 058 5407	POLYESTER	0.15U K	50V
	403 141 5802	POLYESTER	0.15U J	50V
	403 260 2300	MT-COMPO	0.15U J	50V
	403 274 9302	POLYESTER	0.15U J	50V
	403 274 9401	POLYESTER	0.15U K	50V
C516	404 084 3900	ELECT	10U M	50V
★ C601	404 089 1703	MT-POLYEST	0.22U M	275V
★ C608	403 222 1907	CERAMIC	2200P K	1K
	403 232 0204	CERAMIC	2200P K	1K
	403 263 6305	CERAMIC	2200P K	1K
★ C609	404 075 5005	ELECT	470U M	200V
	404 089 3509	ELECT	470U M	200V
★ C611	403 238 8501	CERAMIC	220P K	1K
	403 325 5109	CERAMIC	220P K	1K
C612	403 057 3107	POLYESTER	0.1U K	50V
	403 311 8909	POLYESTER	0.1U K	50V
	404 084 5102	POLYESTER	0.1UK	63V
C613	403 061 9805	POLYESTER	0.047U J	50V
	403 312 2104	POLYESTER	0.047U J	50V
	404 086 6503	POLYESTER	0.047U J	63V

Schematic Location	Part No.	Description			Schematic Location	Part No.	Description		
C614	403 056 9704	POLYESTER	0.01U J	50V	C1055	403 357 9601	CERAMIC	0.1U Z	50V
	403 311 8602	POLYESTER	0.01U J	50V	C1081	404 084 3207	ELECT	47U M	16V
	404 084 5003	POLYESTER	0.01UJ	63V	C1091	403 224 6108	CERAMIC	0.01U K	50V
C622	404 084 3405	ELECT 1	000U M	25V	C1201	404 084 3801	ELECT	1U M	50V
★ C625	403 232 0600	CERAMIC	4700P K	1K	C1206	404 084 3207	ELECT	47U M	16V
	403 263 6503	CERAMIC	4700P K	1K	C1211	404 084 3801	ELECT	1U M	50V
C626	403 134 6403	ELECT	2200U M	16V	C1701	403 058 3403	POLYESTER	0.015U K	50V
C628A	404 037 0703	ELECT	470U M	160V		403 311 9708	POLYESTER	0.015U K	50V
C629	404 084 3009	ELECT	220U M	16V		404 086 5506	POLYESTER	0.015U K	63V
C630	404 084 3801	ELECT	1U M	50V	C1702	404 089 2700	ELECT	100U M	25V
★ C631	404 088 2909	CERAMIC	1000P M	250V	C1704	403 235 4902	CERAMIC	470P K	50V
	404 088 7102	CERAMIC	1000P M	250V	C1705	404 084 2903	ELECT 1	000U M	16V
★ C632	404 088 3005	CERAMIC	2200P M	250V	C1706	404 084 2804	ELECT	100U M	16V
	404 088 7201	CERAMIC	2200P M	250V	C1708	403 235 0805	CERAMIC	150P J	50V
C634	404 084 3207	ELECT	47U M	16V	C1709	403 235 0300	CERAMIC	56P J	50V
C636	403 224 6108	CERAMIC	0.01U K	50V	C1711	403 057 0601	POLYESTER	0.01U K	50V
C641	404 084 4303	ELECT	47U M	50V		403 311 8701	POLYESTER	0.01U K	50V
C642	404 084 3801	ELECT	1U M	50V		404 086 5001	POLYESTER	0.01U K	63V
C683	404 088 5801	ELECT	33U M	16V	C1712	403 214 5203	POLYESTER	0.012U J	50V
C688	404 084 2804	ELECT	100U M	16V		403 311 9203	POLYESTER	0.012U J	50V
C689	403 357 9601	CERAMIC	0.1U Z	50V		404 086 5209	POLYESTER	0.012U J	63V
C693	404 087 1200	ELECT	0.1U M	50V	C1713	403 071 5606	CERAMIC	220P K	50V
C731	404 087 0500	ELECT	220U M	10V	C1714	403 075 4209	CERAMIC	820P K	50V
C732	404 084 3801	ELECT	1U M	50V	C1715	403 065 1409	POLYESTER	4700P K	200V
★ C742	403 077 2807	CERAMIC	1000P Z	2K		403 101 9208	POLYESTER	4700P K	200V
C745	403 159 7409	MT-POLYEST	0.1U K	250V	C1716	403 075 4209	CERAMIC	820P K	50V
C747	403 260 0900	ELECT	47U M	250V	C1717	403 237 7901	MT-COMPO	0.22U J	50V
C801	403 224 6108	CERAMIC	0.01U K	50V		404 086 7906	MT-POLYEST	0.22U J	63V
C806	404 084 2705	ELECT	10U M	16V	C1718	403 061 8303	POLYESTER	4700P K	50V
C808	403 224 5507	CERAMIC	22P J	50V		403 312 2005	POLYESTER	4700P K	50V
C809	403 224 5507	CERAMIC	22P J	50V		404 086 6404	POLYESTER	4700P K	63V
C811	404 084 3801	ELECT	1U M	50V	C1719	403 055 1006	ELECT	10U M	160V
C822	404 084 2408	ELECT	470U M	6.3V	C1721	404 084 3207	ELECT	47U M	16V
C835	403 224 6108	CERAMIC	0.01U K	50V	C1722	403 102 9900	ELECT	22U M	160V
C853	404 087 1200	ELECT	0.1U M	50V	C1724	403 072 4400	CERAMIC	270P K	50V
C854	403 235 1000	CERAMIC	220P J	50V	C1726	403 035 8407	CERAMIC	270P K	500V
C856	404 084 3801	ELECT	1U M	50V	C1727	404 084 2804	ELECT	100U M	16V
C857	403 235 1000	CERAMIC	220P J	50V	C1740	404 084 3801	ELECT	1U M	50V
C858	403 224 5705	CERAMIC	1000P K	50V	C1748	403 069 8305	CERAMIC	0.01U Z	50V
C861	403 224 6108	CERAMIC	0.01U K	50V	C1749	404 087 3204	ELECT	100U M	35V
C1001	404 084 2705	ELECT	10U M	16V	C1902	404 084 2705	ELECT	10U M	16V
C1002	404 088 5702	ELECT	22U M	16V	C3401	404 087 1200	ELECT	0.1U M	50V
C1004	403 224 6108	CERAMIC	0.01U K	50V	C3404	404 089 6500	NP-ELECT	4.7U M	50V
C1005	403 224 6108	CERAMIC	0.01U K	50V	C3406	403 325 2504	CERAMIC	0.012U K	50V
C1006	404 084 2705	ELECT	10U M	16V	C3407	403 235 5701	CERAMIC	5600P K	50V
C1007	403 224 6108	CERAMIC	0.01U K	50V	C3408	404 084 3702	ELECT	0.47U M	50V
C1011	403 224 6108	CERAMIC	0.01U K	50V	C3411	404 084 3702	ELECT	0.47U M	50V
C1021	404 084 2705	ELECT	10U M	16V	C3412	404 084 3207	ELECT	47U M	16V
C1022	404 088 5702	ELECT	22U M	16V	C3413	404 091 6604	ELECT	4.7U M	25V
C1026	404 084 2705	ELECT	10U M	16V	C3414	404 084 2804	ELECT	100U M	16V
C1031	403 224 6108	CERAMIC	0.01U K	50V	C3416	404 089 6500	NP-ELECT	4.7U M	50V
C1032	404 084 3009	ELECT	220U M	16V	C3417	404 091 6604	ELECT	4.7U M	25V
C1051	404 084 2705	ELECT	10U M	16V	C3418	404 089 6500	NP-ELECT	4.7U M	50V
C1054	403 357 9601	CERAMIC	0.1U Z	50V	C3421	403 224 5606	CERAMIC	2700P K	50V

Schematic Location	Part No.	Description
C3422	403 323 3602	CERAMIC 0.047U K 50V
C3423	403 342 9203	TA-SOLID 3.3U K 10V
C3424	404 089 6500	NP-ELECT 4.7U M 50V
C3426	403 299 1820	TA-SOLID 10U K 10V
C3427	404 084 3801	ELECT 1U M 50V
C3431	403 224 6009	CERAMIC 4700P K 50V
C3432	404 087 1200	ELECT 0.1U M 50V
C3433	403 224 6009	CERAMIC 4700P K 50V
C3434	403 343 4603	CERAMIC 0.022U K 50V
C3435	404 091 6604	ELECT 4.7U M 25V
C3436	404 089 6500	NP-ELECT 4.7U M 50V
C3437	404 091 6604	ELECT 4.7U M 25V
C3439	404 089 6500	NP-ELECT 4.7U M 50V
C3441	404 091 6604	ELECT 4.7U M 25V
C3442	404 091 6604	ELECT 4.7U M 25V
C3443	404 091 6604	ELECT 4.7U M 25V
C3444	404 091 6604	ELECT 4.7U M 25V
C3445	404 091 6604	ELECT 4.7U M 25V
C3447	404 091 6604	ELECT 4.7U M 25V
C8857	403 254 9704	CERAMIC 2200P K 3K
C8861	403 247 5003	CERAMIC 470P K 1K
C8861	403 269 1809	CERAMIC 470P K 1K
C8863	403 083 0101	POLYPRO 0.039U J 200V
C8864	403 364 5405	CERAMIC 150P K 1K
C8865	403 353 6703	CERAMIC 1800P K 1K
C8865	403 368 4305	CERAMIC 1800P K 1K
C8866	403 247 6505	CERAMIC 680P K 1K
	403 271 9800	CERAMIC 680P K 1K
C8867	403 069 8305	CERAMIC 0.01U Z 50V
C8868	403 056 7304	POLYESTER 1000P J 50V
	403 311 8404	POLYESTER 1000P J 50V
	404 086 4806	POLYESTER 1000P J 63V
C8869	403 070 8440	CERAMIC 1500P K 50V
C8870	403 014 7803	CERAMIC 180P J 50V
C8871	403 058 0501	POLYESTER 1500P J 50V
	403 311 9401	POLYESTER 1500P J 50V
	404 090 5905	POLYESTER 1500P J 63V
C8873	403 043 9106	ELECT 47U M 16V

DIODES

D101	408 047 6205	ZENER DIODE MTZJ36A
D276	407 149 0807	DIODE 1SS355 TE-17
D277	407 149 0807	DIODE 1SS355 TE-17
D278	407 149 0807	DIODE 1SS355 TE-17
D279	407 149 0807	DIODE 1SS355 TE-17
D351	408 047 6502	ZENER DIODE MTZJ5.1A
D406	407 006 4108	DIODE ERB44-04
D407	407 095 8001	DIODE ERD07-15L
D408	407 222 4401	ZENER DIODE 1Z150
★ D421	407 158 1307	ZENER DIODE HZ11B2L
★ D422	407 158 1307	ZENER DIODE HZ11B2L
D428	407 054 5706	ZENER DIODE RD15EB1
	407 099 6904	ZENER DIODE MTZJ15A

Schematic Location	Part No.	Description
D429	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D441	407 007 7702	DIODE EU2A
D445	407 007 7405	DIODE EU1
D446	407 055 1707	ZENER DIODE RD20EB1
	407 099 7802	ZENER DIODE MTZJ20A
D463	407 012 4406	DIODE 1SS133
D481	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
	407 124 6404	DIODE ERA18-04
D482	407 011 4407	DIODE TVR1G
D483	407 007 6606	DIODE ES1
	407 124 5506	DIODE RMPG06G
	407 124 6404	DIODE ERA18-04
D486	407 054 0008	ZENER DIODE RD10EB2
	407 099 6102	ZENER DIODE MTZJ10B
D490	408 047 7707	ZENER DIODE MTZJ5.6C
D501	407 005 8602	DIODE ERA15-02
	407 011 3004	DIODE S5277B
	407 088 6502	DIODE MPG06D
	408 009 9404	DIODE 1N4002ID
D502	407 118 2207	ZENER DIODE 1Z75
D503	408 047 6205	ZENER DIODE MTZJ36A
D508	407 006 0100	DIODE ERA91-02
★ D601	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★ D602	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★ D603	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
★ D604	407 005 7605	DIODE EM2B
	407 013 3200	DIODE 1S1887A
	408 008 8606	DIODE GP15G
D611	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
★ D612	407 218 0707	PC TLP421(BL)
	407 231 2801	PHOTO COUPLE PC123YC2
D613	407 057 9800	ZENER DIODE RD9.1EB3
	407 063 9702	ZENER DIODE MTZJ9.1C
D614	407 006 0100	DIODE ERA91-02
D621	407 106 2806	DIODE RU3YX
★ D624	407 129 6706	DIODE RU4YX LF-L1
	407 211 6102	DIODE FE301-1L43
★ D625A	407 191 3900	DIODE FML-G16S
D627	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D629	407 054 7007	ZENER DIODE RD16EB1
	407 099 7208	ZENER DIODE MTZJ16A

Schematic Location	Part No.	Description
D641	407 007 7801	DIODE EU2Z
D642	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D643	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D680	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D683	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D687	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D693	407 057 2702	ZENER DIODE RD6.2EB2
	407 099 5402	ZENER DIODE MTZJ6.2B
D694	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D708	401 012 8105	CARBON 100K JA 1/4W
D741	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D754	408 048 2404	ZENER DIODE MTZJ12B
D801	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D831	407 222 5903	ZD UDZS-TE-173.6B
D1002	408 047 2306	ZENER DIODE MTZJ10B
D1006	408 047 2306	ZENER DIODE MTZJ10B
D1011	408 047 2306	ZENER DIODE MTZJ10B
D1022	408 047 2306	ZENER DIODE MTZJ10B
D1026	408 047 2306	ZENER DIODE MTZJ10B
D1031	408 047 2306	ZENER DIODE MTZJ10B
D1705	407 108 5300	DIODE SB07-03N
D1707	407 108 5300	DIODE SB07-03N
D1708	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148
D1901	408 047 9206	ZENER DIODE MTZJ7.5C
D8861	407 129 3002	DIODE ERA22-06
D8862	407 129 3002	DIODE ERA22-06
D8864	407 123 3305	ZENER DIODE RD2.4EB1
D8865	407 013 4306	DIODE 1S2076A
	407 013 7109	DIODE 1S2473
	408 008 2406	DIODE 1N4148

Schematic Location	Part No.	Description
INTEGRATED CIRCUITS		
IC001	409 389 4607	IC LA4600
★ IC101	409 526 7221	IC LA76835NM-TBM
IC301	409 544 5807	IC LA76604M-TLM-E
★ IC501	409 374 0607	IC LA7846N
★ IC601	409 172 8102	IC SE130NH
IC681	409 066 7303	IC UPC78L05J
	409 241 8309	IC TA78L05S
IC701	409 468 8403	IC TDA6103Q/N3
IC801	410 456 7803	IC M37272M8-***FP T4
IC802	409 333 3700	IC 24LC02B/P
	409 376 1503	IC ST24C02B6
	409 440 8902	IC M24C02-BN6
	409 495 6908	IC CAT24WC02P
	409 497 0706	IC S524C20D21-DCB0
	409 528 8404	IC S524A40X21-DCB0
IC1001	409 051 3006	IC TC4053BP
IC1002	409 051 3006	IC TC4053BP
IC1003	409 051 3006	IC TC4053BP
IC1201	409 051 2930	IC TC4053BF-EL
IC3401	409 467 1108	IC CXA2134Q-T6
IC8860	409 253 3606	IC TC74HC221AP
COILS		
★ LF601	645 012 0589	LINE FILTER
	645 026 8274	LINE FILTER
L164	645 003 9713	INDUCTOR, 15U K
	645 016 2657	INDUCTOR, 15U K
L256	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L301	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L302	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L306	645 008 2856	INDUCTOR, 39U K
	645 016 3012	INDUCTOR, 39U K
L401	645 052 5926	INDUCTOR, 3.3U, FILTER
L402	652 000 2180	CORE, PIPE
L403	610 078 6820	PIPE CORE
	652 000 1282	CORE, PIPE
★ L413	645 030 2879	COIL, LINEARITY
L414	610 031 1367	INDUCTOR 202J
	610 211 3488	INDUCTOR
	645 005 5645	INDUCTOR, 2200U K
	645 007 8361	INDUCTOR, 2000U
L416	645 016 9144	INDUCTOR, 650UH
L602	645 005 0763	CORE, PIPE
L611	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L612	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L621	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE

Schematic Location	Part No.	Description
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L623	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L625	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L628	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L721	645 001 4796	INDUCTOR, 150U K
L801	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L821	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L851	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L881	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
L882	645 006 2490	INDUCTOR, 1U K
	645 016 2411	INDUCTOR, 1U K
★ L901	645 053 5277	ASSY, COIL, DEGAUSSING
L1701	610 031 3873	INDUCTOR, 10U K
	645 016 2534	INDUCTOR, 10U K
L1702	645 008 2825	INDUCTOR, 27U K
	645 016 2893	INDUCTOR, 27U K
L1703	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L1704	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L1705	610 078 5946	PIPE CORE
	652 000 1725	CORE, PIPE
L1706	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L1901	645 008 2894	INDUCTOR, 5.6U K
	645 016 3104	INDUCTOR, 5.6U K
L8860	645 007 8361	INDUCTOR, 2000U

TRANSISTORS

Q001	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q135	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA

Schematic Location	Part No.	Description
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	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q202	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q208	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q271	405 002 0308	TR 2SA1037K-T-96-R
	405 002 0407	TR 2SA1037K-T-96-S
	405 002 6726	TR 2SA1179-M6
	405 002 6924	TR 2SA1179-M7-TB
	405 134 5925	TR 2SA1037AK T146 R
	405 147 2205	TR 2SA1037AK T146 S
	405 163 1503	TR 2SA1179N-M6-TB
	405 163 2708	TR 2SA1179N-M7-TB
	405 173 9605	TR 2SA1235A1E
	405 173 9704	TR 2SA1235A1F
Q301	405 014 4509	TR 2SC2412K-T-96-R
	405 014 4608	TR 2SC2412K-T-96-S
	405 015 8724	TR 2SC2812-L6-TB
	405 015 8922	TR 2SC2812-L7-TB
	405 163 1602	TR 2SC2812N-L6-TB
	405 163 1701	TR 2SC2812N-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q302	405 002 0308	TR 2SA1037K-T-96-R
	405 002 0407	TR 2SA1037K-T-96-S
	405 002 6726	TR 2SA1179-M6
	405 002 6924	TR 2SA1179-M7-TB
	405 134 5925	TR 2SA1037AK T146 R
	405 147 2205	TR 2SA1037AK T146 S
	405 163 1503	TR 2SA1179N-M6-TB
	405 163 2708	TR 2SA1179N-M7-TB
	405 173 9605	TR 2SA1235A1E
	405 173 9704	TR 2SA1235A1F
Q303	405 014 4509	TR 2SC2412K-T-96-R
	405 014 4608	TR 2SC2412K-T-96-S
	405 015 8724	TR 2SC2812-L6-TB
	405 015 8922	TR 2SC2812-L7-TB
	405 163 1602	TR 2SC2812N-L6-TB
	405 163 1701	TR 2SC2812N-L7-TB

Schematic Location	Part No.	Description
Q315	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
	405 014 4509	TR 2SC2412K-T-96-R
	405 014 4608	TR 2SC2412K-T-96-S
	405 015 8724	TR 2SC2812-L6-TB
	405 015 8922	TR 2SC2812-L7-TB
	405 163 1602	TR 2SC2812N-L6-TB
Q321	405 163 1701	TR 2SC2812N-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
	405 002 0308	TR 2SA1037K-T-96-R
	405 002 0407	TR 2SA1037K-T-96-S
	405 002 6726	TR 2SA1179-M6
	405 002 6924	TR 2SA1179-M7-TB
Q401	405 134 5925	TR 2SA1037AK T146 R
	405 147 2205	TR 2SA1037AK T146 S
	405 163 1503	TR 2SA1179N-M6-TB
	405 163 2708	TR 2SA1179N-M7-TB
	405 173 9605	TR 2SA1235A1E
	405 173 9704	TR 2SA1235A1F
	405 013 6207	TR 2SC2271-D-CTV
★ Q402 Q461	405 013 6306	TR 2SC2271-E-CTV
	405 029 7106	TR 2SC2271-D
	405 029 7205	TR 2SC2271-E
	405 163 4306	TR 2SD2645-YB
	405 017 1901	TR 2SC3114-T
	405 039 3303	TR 2SC3114-R
	405 039 3402	TR 2SC3114-S
Q462	405 138 0906	TR 2SB1370-D
	405 138 1002	TR 2SB1370-E
	405 138 1101	TR 2SB1370-F
	405 138 1309	TR 2SB1565-E
	405 138 1408	TR 2SB1565-F
	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
Q486 Q490	405 023 5009	TR 2SD400-E-MP
	405 023 5306	TR 2SD400-F-MP
	405 148 1801	TR 2SK2638
	405 013 6801	TR 2SC2274-E
	405 013 7006	TR 2SC2274-F
	405 006 6504	TR 2SA984-E
	405 006 6702	TR 2SA984-F
★ Q601 Q611	405 013 6801	TR 2SC2274-E
	405 013 7006	TR 2SC2274-F
	405 009 6907	TR 2SB985-S
	405 009 7003	TR 2SB985-T
	405 089 0000	TR 2SA1707-S
	405 089 0109	TR 2SA1707-T
	405 011 8401	TR 2SC1740S-Q
Q612 Q613	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
Q627 Q635	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S

Schematic Location	Part No.	Description
Q641	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
Q681	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
Q688	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
Q693	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
	405 001 7605	TR 2SA1015-Y(SAN)
Q695	405 004 3208	TR 2SA564A-R(CU)
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
Q701	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
Q695	405 157 0505	TR 2SC536NF-NPA
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3208	TR 2SA564A-R(CU)
	405 004 4809	TR 2SA608-F-CTV-NP
	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
Q695	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R

Schematic Location	Part No.	Description
Q711	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q721	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q831	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q1001	405 014 4509	TR 2SC2412K-T-96-R
	405 014 4608	TR 2SC2412K-T-96-S
	405 015 8724	TR 2SC2812-L6-TB
	405 015 8922	TR 2SC2812-L7-TB
	405 163 1602	TR 2SC2812N-L6-TB
	405 163 1701	TR 2SC2812N-L7-TB
	405 173 9803	TR 2SC3928A1R
	405 173 9902	TR 2SC3928A1S
Q1201	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
Q1202	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA

Schematic Location	Part No.	Description
Q1211	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1212	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1700	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q1701	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q1702	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1704	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O

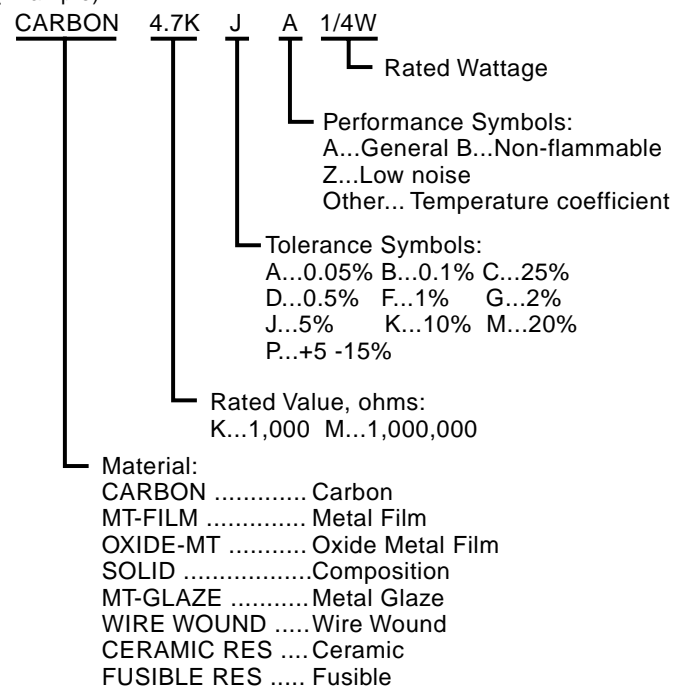
Schematic Location	Part No.	Description
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1705	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1706	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1707	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q1708	405 001 7407	TR 2SA1015-O(SAN)
	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3109	TR 2SA564A-Q(CU)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1707	TR 2SA933S-Q
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q1709	405 108 4903	TR 2SA1837-LB
Q1711	405 108 5009	TR 2SC4793-LB
Q1712	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2101	TR 2SC1815-O

Schematic Location	Part No.	Description
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 020 7907	TR 2SC945A-RA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA
Q8861	406 011 2802	TR 2SK2045-PM-YA14
	406 013 5900	TR 2SK2045LS-PM-YA11
Q8862	405 001 7605	TR 2SA1015-Y(SAN)
	405 004 3208	TR 2SA564A-R(CU)
	405 006 1806	TR 2SA933S-R
	405 151 3304	TR 2SA608NF-NPA
	406 000 6804	TR 2SA1015-GR(SAN)
Q8863	405 011 8401	TR 2SC1740S-Q
	405 011 8500	TR 2SC1740S-R
	405 011 8609	TR 2SC1740S-S
	405 012 2002	TR 2SC1815-GR
	405 012 2309	TR 2SC1815-Y
	405 020 7501	TR 2SC945A-PA
	405 020 7709	TR 2SC945A-QA
	405 151 8705	TR 2SC536NG-NPA
	405 157 0505	TR 2SC536NF-NPA

NOTES:

Read description of the Resistor as follows:

(Example)



R001	401 024 9701	CARBON	12K JA	1/6W
R002	401 024 9701	CARBON	12K JA	1/6W
R003	401 256 3805	MT-GLAZE	1.5K JA	1/10W
R004	401 256 3805	MT-GLAZE	1.5K JA	1/10W
R008	401 026 9907	CARBON	4.7K JA	1/6W

Schematic Location	Part No.	Description
★ R009	401 064 5701	OXIDE-MT 1.8 JA 2W
★ R010	401 064 5701	OXIDE-MT 1.8 JA 2W
R011	401 026 3905	CARBON 330 JA 1/6W
R012	401 027 2600	CARBON 5.6K JA 1/6W
★ R106	401 008 2001	CARBON 18K JA 1/2W
R107	401 023 2802	CARBON 8.2K JA 1/4W
R131	401 256 0408	MT-GLAZE 12K JA 1/10W
R133	401 256 3805	MT-GLAZE 1.5K JA 1/10W
R135	401 255 6500	MT-GLAZE 100 JA 1/10W
R137	401 150 6209	MT-GLAZE 1K JA 1/10W
R142	401 026 4605	CARBON 33K JA 1/6W
R143	401 150 6209	MT-GLAZE 1K JA 1/10W
R151	401 152 3206	MT-GLAZE 330 JA 1/10W
R161	401 150 5806	MT-GLAZE 100K JA 1/10W
R162	401 150 5806	MT-GLAZE 100K JA 1/10W
R163	401 256 0002	MT-GLAZE 120 JA 1/10W
R164	401 150 6209	MT-GLAZE 1K JA 1/10W
R166	401 162 3609	MT-GLAZE 470 JA 1/10W
R167	401 256 2907	MT-GLAZE 150 JA 1/10W
R201	401 026 9600	CARBON 470 JA 1/6W
R208	401 024 7004	CARBON 1K JA 1/6W
R209	401 024 6700	CARBON 100 JA 1/6W
R212	401 256 7100	MT-GLAZE 680K JA 1/10W
R251	401 150 5905	MT-GLAZE 10K JA 1/10W
R252	401 027 2600	CARBON 5.6K JA 1/6W
R272	401 256 7308	MT-GLAZE 6.8K JA 1/10W
R273	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R276	401 026 9907	CARBON 4.7K JA 1/6W
R277	401 150 5905	MT-GLAZE 10K JA 1/10W
R278	401 150 6209	MT-GLAZE 1K JA 1/10W
R279	401 256 7506	MT-GLAZE 390 JA 1/10W
R281	401 150 5905	MT-GLAZE 10K JA 1/10W
R284	401 026 9303	CARBON 47 JA 1/6W
R287	401 024 6700	CARBON 100 JA 1/6W
R288	401 024 6700	CARBON 100 JA 1/6W
R289	401 024 6700	CARBON 100 JA 1/6W
R302	401 256 0101	MT-GLAZE 8.2K JA 1/10W
R303	401 150 5905	MT-GLAZE 10K JA 1/10W
R304	401 256 0309	MT-GLAZE 820 JA 1/10W
R306	401 256 0309	MT-GLAZE 820 JA 1/10W
R307	401 256 6905	MT-GLAZE 680 JA 1/10W
R308	401 162 2701	MT-GLAZE 180 JA 1/10W
R309	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R312	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R313	401 150 6209	MT-GLAZE 1K JA 1/10W
R315	401 162 2404	MT-GLAZE 1.2K JA 1/10W
R316	401 150 6001	MT-GLAZE 0.000 ZA 1/10W
R317	401 256 4109	MT-GLAZE 56 JA 1/10W
R318	401 150 6209	MT-GLAZE 1K JA 1/10W
R319	401 256 0101	MT-GLAZE 8.2K JA 1/10W
R321	401 255 6500	MT-GLAZE 100 JA 1/10W
R322	401 150 6209	MT-GLAZE 1K JA 1/10W
R323	401 024 9305	CARBON 1.2K JA 1/6W
R324	401 027 2600	CARBON 5.6K JA 1/6W

Schematic Location	Part No.	Description
R326	401 024 9305	CARBON 1.2K JA 1/6W
R331	401 162 2404	MT-GLAZE 1.2K JA 1/10W
R341	401 150 5905	MT-GLAZE 10K JA 1/10W
R371	401 012 7108	CARBON 10K JB 1/4W
R400	401 024 6700	CARBON 100 JA 1/6W
★ R401	401 012 4503	CARBON 100 JA 1/4W
★ R402	401 012 4503	CARBON 100 JA 1/4W
R404	401 026 3905	CARBON 330 JA 1/6W
R405	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R406	401 010 8305	CARBON 5.6K JA 1/2W
★ R407	401 069 3702	OXIDE-MT 6.8K JA 2W
★ R408	401 059 4900	OXIDE-MT 15K JA 1W
★ R413	402 089 1006	OXIDE-MT 3.9 JB 7W
R416	401 018 1605	CARBON 33 JA 1/4W
R418	401 009 1607	CARBON 2.7K JB 1/2W
★ R421	401 052 9100	MT-FILM 1.5K FA 1/6W
★ R422	401 052 6802	MT-FILM 10K FA 1/6W
★ R423	401 264 9301	MT-GLAZE 3.3K FA 1/10W
R426	401 256 6905	MT-GLAZE 680 JA 1/10W
R427	401 027 2105	CARBON 56 JA 1/6W
R428	401 025 1902	CARBON 15K JA 1/6W
R430	401 150 6209	MT-GLAZE 1K JA 1/10W
★ R441	401 064 3806	OXIDE-MT 1 JA 2W
R443	401 026 9907	CARBON 4.7K JA 1/6W
R444	401 025 4606	CARBON 18K JA 1/6W
★ R445	401 058 2501	OXIDE-MT 100 JA 1W
R449	401 265 1700	MT-GLAZE 4.7K FA 1/10W
R460	401 053 4005	MT-FILM 560 FA 1/6W
R462	401 025 4200	CARBON 1.8K JA 1/6W
★ R463	401 065 9609	OXIDE-MT 18 JA 2W
R465	401 154 1804	MT-FILM 27K FA 1/6W
R469	401 052 9308	MT-FILM 15K FA 1/6W
★ R481	401 006 7701	CARBON 1 JB 1/2W
★ R482	401 021 0701	CARBON 56 JA 1/4W
★ R483	401 006 7701	CARBON 1 JB 1/2W
R485	401 162 3104	MT-GLAZE 3.3K JA 1/10W
★ R486	401 069 5607	OXIDE-MT 8.2 JA 2W
R487	401 026 6609	CARBON 390 JA 1/6W
★ R488	401 059 1602	OXIDE-MT 15 JA 1W
★ R489	401 065 9609	OXIDE-MT 18 JA 2W
R491	401 012 5708	CARBON 1K JA 1/4W
R492	401 053 4708	MT-FILM 6.8K FA 1/6W
R493	401 014 6109	CARBON 150K JA 1/4W
R494	401 013 7305	CARBON 120K JA 1/4W
★ R495	401 066 5204	OXIDE-MT 22 JA 2W
★ R497	401 069 0404	OXIDE-MT 6.8 JA 2W
R499	401 026 6609	CARBON 390 JA 1/6W
R503	401 026 9907	CARBON 4.7K JA 1/6W
R504	401 024 7400	CARBON 10K JA 1/6W
R505	401 006 8401	CARBON 1.5 JA 1/2W
R506	401 027 8305	CARBON 820 JA 1/6W
R507	401 006 8401	CARBON 1.5 JA 1/2W
R508	401 026 4605	CARBON 33K JA 1/6W
R509	401 025 4606	CARBON 18K JA 1/6W

Schematic Location	Part No.	Description
★ R511	401 066 0506	OXIDE-MT 180 JA 2W
R513	401 062 1200	OXIDE-MT 470 JA 1W
★ R516	401 066 0506	OXIDE-MT 180 JA 2W
R517	401 026 4605	CARBON 33K JA 1/6W
R518	401 024 9701	CARBON 12K JA 1/6W
R531	401 256 7308	MT-GLAZE 6.8K JA 1/10W
R532	401 256 6608	MT-GLAZE 68K JA 1/10W
R533	401 027 5502	CARBON 6.8K JA 1/6W
★ R601	402 056 6805	WIRE WOUND 1 KA 10W
	402 073 6901	WIRE WOUND 1 KA 10W
	402 088 9508	WIRE WOUND 1.0 KA 10W
★ R602	402 000 0705	SOLID 3.3M KA 1/2W
	402 088 1502	RESISTER 3.3M JA 1/2W
	402 090 2108	RESISTER 3.3M JA 1/2W
R603	401 010 9203	CARBON 560K JA 1/2W
★ R604	401 066 3002	OXIDE-MT 2.2 JA 2W
R606	401 019 9600	CARBON 47 JA 1/4W
R607	401 016 1508	CARBON 22 JA 1/4W
R608	401 162 3807	MT-GLAZE 470K JA 1/10W
R609	401 162 3005	MT-GLAZE 22K JA 1/10W
R611	401 027 0309	CARBON 47K JA 1/6W
★ R612	402 001 8502	FUSIBLE RES 10 J- 1/2W
★ R613	401 180 8402	OXIDE-MT 0.47 JA 2W
R614	401 020 0900	CARBON 470 JB 1/4W
★ R615	401 180 8402	OXIDE-MT 0.47 JA 2W
R616	401 150 5905	MT-GLAZE 10K JA 1/10W
★ R617	402 001 8106	FUSIBLE RES 680 J- 1/4W
R618	401 012 5708	CARBON 1K JA 1/4W
R619	401 162 3005	MT-GLAZE 22K JA 1/10W
R621	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R627	401 024 7400	CARBON 10K JA 1/6W
R628	401 013 5301	CARBON 1.2K JA 1/4W
R629	401 150 6209	MT-GLAZE 1K JA 1/10W
★ R630	401 060 5002	OXIDE-MT 22K JA 1W
R631	401 022 3107	CARBON 6.8K JA 1/4W
R632	401 150 6209	MT-GLAZE 1K JA 1/10W
R634	401 256 6301	MT-GLAZE 47K JA 1/10W
R641	401 024 7400	CARBON 10K JA 1/6W
R642	401 150 5905	MT-GLAZE 10K JA 1/10W
R644	401 024 7707	CARBON 100K JA 1/6W
R645	401 150 5905	MT-GLAZE 10K JA 1/10W
R683	401 026 7002	CARBON 3.9K JA 1/6W
R687	401 162 3005	MT-GLAZE 22K JA 1/10W
R688	401 256 0408	MT-GLAZE 12K JA 1/10W
R691	401 024 7400	CARBON 10K JA 1/6W
R692	401 027 5908	CARBON 68K JA 1/6W
R693	401 027 3201	CARBON 560K JA 1/6W
R694	401 024 7400	CARBON 10K JA 1/6W
R695	401 025 8208	CARBON 22K JA 1/6W
R701	401 027 8107	CARBON 82 JA 1/6W
R702	401 025 1605	CARBON 1.5K JA 1/6W
R703	401 024 7004	CARBON 1K JA 1/6W
R704	401 158 1800	CARBON 100 JB 1/6W
★ R705	401 058 3706	OXIDE-MT 1K JA 1W

Schematic Location	Part No.	Description
★ R706	401 058 5908	OXIDE-MT 100K JA 1W
★ R707	401 058 5908	OXIDE-MT 100K JA 1W
★ R708	401 058 5908	OXIDE-MT 100K JA 1W
R709	401 024 9305	CARBON 1.2K JA 1/6W
R711	401 027 8107	CARBON 82 JA 1/6W
R712	401 025 1605	CARBON 1.5K JA 1/6W
R713	401 024 7004	CARBON 1K JA 1/6W
R714	401 158 1800	CARBON 100 JB 1/6W
★ R715	401 058 3706	OXIDE-MT 1K JA 1W
R719	401 024 9305	CARBON 1.2K JA 1/6W
R721	401 027 8107	CARBON 82 JA 1/6W
R722	401 025 1605	CARBON 1.5K JA 1/6W
R723	401 024 7004	CARBON 1K JA 1/6W
R724	401 158 1800	CARBON 100 JB 1/6W
★ R725	401 058 3706	OXIDE-MT 1K JA 1W
R729	401 024 9305	CARBON 1.2K JA 1/6W
R733	401 013 7305	CARBON 120K JA 1/4W
R734	401 026 1000	CARBON 2.7K JA 1/6W
R803	401 024 6700	CARBON 100 JA 1/6W
R804	401 024 6700	CARBON 100 JA 1/6W
R806	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R807	401 150 5905	MT-GLAZE 10K JA 1/10W
R808	401 150 5905	MT-GLAZE 10K JA 1/10W
R809	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R811	401 025 1902	CARBON 15K JA 1/6W
R812	401 162 3005	MT-GLAZE 22K JA 1/10W
R813	401 150 5905	MT-GLAZE 10K JA 1/10W
R814	401 150 5905	MT-GLAZE 10K JA 1/10W
R816	401 152 3206	MT-GLAZE 330 JA 1/10W
R824	401 255 6500	MT-GLAZE 100 JA 1/10W
R825	401 150 5905	MT-GLAZE 10K JA 1/10W
R829	401 255 6500	MT-GLAZE 100 JA 1/10W
R835	401 026 1000	CARBON 2.7K JA 1/6W
R846	401 162 3104	MT-GLAZE 3.3K JA 1/10W
R847	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R848	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R849	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R851	401 024 7004	CARBON 1K JA 1/6W
R852	401 026 7408	CARBON 39K JA 1/6W
R853	401 256 3201	MT-GLAZE 1.5M JA 1/10W
R854	401 256 3805	MT-GLAZE 1.5K JA 1/10W
R856	401 255 6500	MT-GLAZE 100 JA 1/10W
R857	401 255 6500	MT-GLAZE 100 JA 1/10W
R864	401 256 0200	MT-GLAZE 120K JA 1/10W
R867	401 024 7400	CARBON 10K JA 1/6W
R872	401 256 3607	MT-GLAZE 15K JA 1/10W
R873	401 162 3005	MT-GLAZE 22K JA 1/10W
R874	401 255 6500	MT-GLAZE 100 JA 1/10W
R877	401 255 6500	MT-GLAZE 100 JA 1/10W
R879	401 024 6700	CARBON 100 JA 1/6W
R881	401 255 6500	MT-GLAZE 100 JA 1/10W
R882	401 255 6500	MT-GLAZE 100 JA 1/10W
R883	401 255 6500	MT-GLAZE 100 JA 1/10W
R884	401 255 6500	MT-GLAZE 100 JA 1/10W

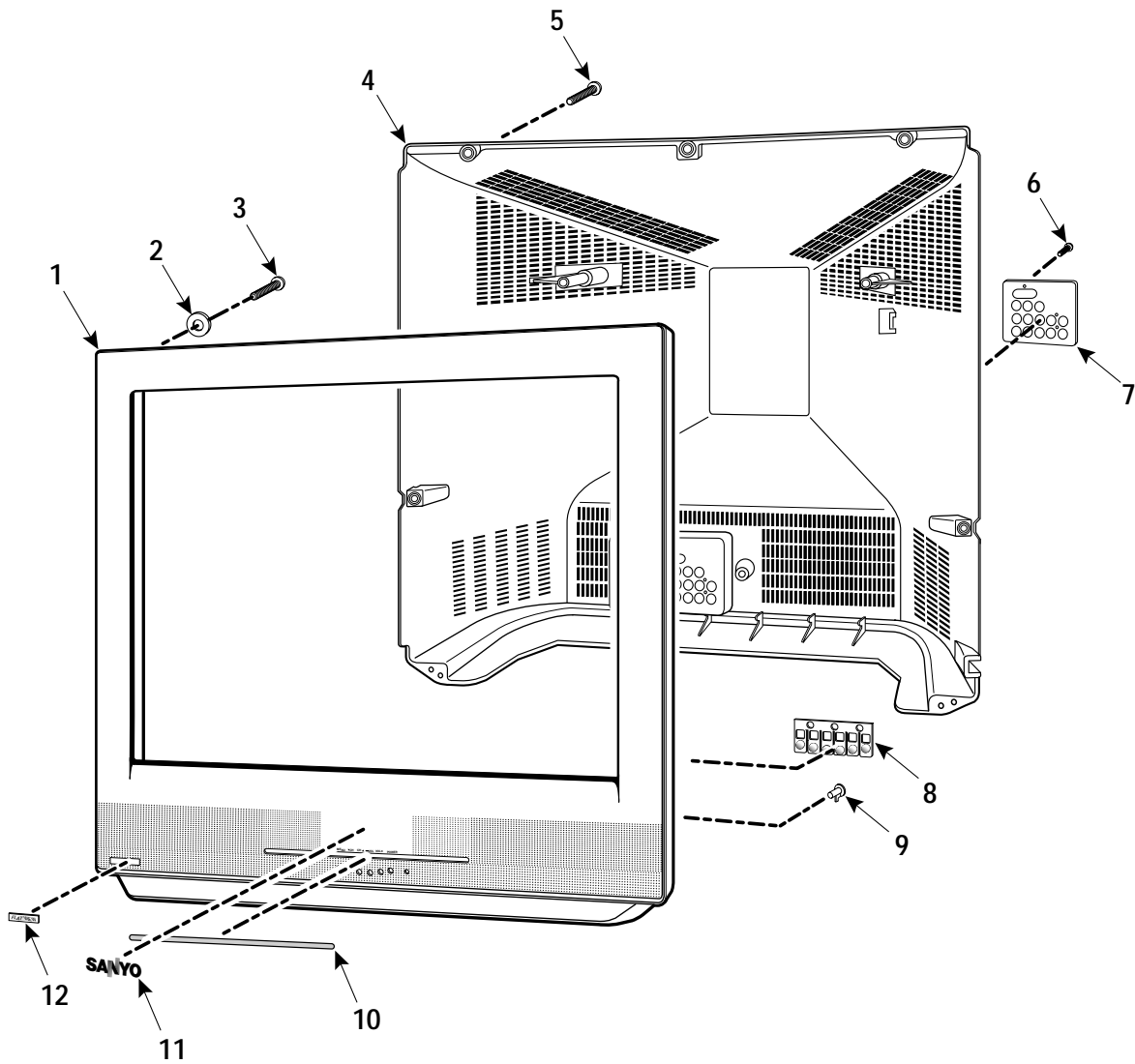
Schematic Location	Part No.	Description
R886	401 150 5905	MT-GLAZE 10K JA 1/10W
R1001	401 255 9006	MT-GLAZE 82 JA 1/10W
R1002	401 255 9006	MT-GLAZE 82 JA 1/10W
R1004	401 025 8208	CARBON 22K JA 1/6W
R1006	401 026 9600	CARBON 470 JA 1/6W
R1007	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R1008	401 025 8208	CARBON 22K JA 1/6W
R1009	401 024 6700	CARBON 100 JA 1/6W
R1011	401 256 2709	MT-GLAZE 75 JA 1/10W
R1012	401 256 6004	MT-GLAZE 27K JA 1/10W
R1013	401 024 9701	CARBON 12K JA 1/6W
R1021	401 255 9006	MT-GLAZE 82 JA 1/10W
R1022	401 255 9006	MT-GLAZE 82 JA 1/10W
R1026	401 026 9600	CARBON 470 JA 1/6W
R1027	401 162 3708	MT-GLAZE 4.7K JA 1/10W
R1031	401 256 2709	MT-GLAZE 75 JA 1/10W
R1032	401 256 6004	MT-GLAZE 27K JA 1/10W
R1033	401 024 9701	CARBON 12K JA 1/6W
R1043	401 162 3005	MT-GLAZE 22K JA 1/10W
R1046	401 150 5905	MT-GLAZE 10K JA 1/10W
R1047	401 026 1307	CARBON 27K JA 1/6W
R1048	401 150 5905	MT-GLAZE 10K JA 1/10W
R1049	401 256 6004	MT-GLAZE 27K JA 1/10W
R1051	401 256 2709	MT-GLAZE 75 JA 1/10W
R1052	401 255 6500	MT-GLAZE 100 JA 1/10W
R1053	401 256 2709	MT-GLAZE 75 JA 1/10W
R1054	401 255 6500	MT-GLAZE 100 JA 1/10W
R1055	401 256 2709	MT-GLAZE 75 JA 1/10W
R1056	401 255 6500	MT-GLAZE 100 JA 1/10W
R1057	401 150 5905	MT-GLAZE 10K JA 1/10W
R1058	401 026 1307	CARBON 27K JA 1/6W
R1201	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R1202	401 256 6608	MT-GLAZE 68K JA 1/10W
R1203	401 150 6209	MT-GLAZE 1K JA 1/10W
R1204	401 256 1702	MT-GLAZE 33K JA 1/10W
R1206	401 162 3005	MT-GLAZE 22K JA 1/10W
R1208	401 024 7004	CARBON 1K JA 1/6W
R1209	401 255 6500	MT-GLAZE 100 JA 1/10W
R1210	401 255 6500	MT-GLAZE 100 JA 1/10W
R1211	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R1212	401 256 6608	MT-GLAZE 68K JA 1/10W
R1213	401 150 6209	MT-GLAZE 1K JA 1/10W
R1214	401 256 1702	MT-GLAZE 33K JA 1/10W
R1218	401 024 7004	CARBON 1K JA 1/6W
R1700	401 026 9907	CARBON 4.7K JA 1/6W
R1702	401 162 3005	MT-GLAZE 22K JA 1/10W
R1703	401 256 6608	MT-GLAZE 68K JA 1/10W
R1705	401 027 2303	CARBON 560 JA 1/6W
R1706	401 025 4200	CARBON 1.8K JA 1/6W
R1707	401 026 4308	CARBON 3.3K JA 1/6W
R1711	401 150 6209	MT-GLAZE 1K JA 1/10W
R1712	401 162 2800	MT-GLAZE 1.8K JA 1/10W
R1714	401 256 0309	MT-GLAZE 820 JA 1/10W
R1716	401 025 7409	CARBON 220 JA 1/6W

Schematic Location	Part No.	Description
R1717	401 162 3609	MT-GLAZE 470 JA 1/10W
R1718	401 162 2909	MT-GLAZE 220 JA 1/10W
R1719	401 162 4002	MT-GLAZE 560 JA 1/10W
R1720	401 025 4200	CARBON 1.8K JA 1/6W
R1722	401 027 5908	CARBON 68K JA 1/6W
R1723	401 026 7408	CARBON 39K JA 1/6W
R1724	401 026 7408	CARBON 39K JA 1/6W
R1725	401 024 6700	CARBON 100 JA 1/6W
R1727	401 012 3506	CARBON 10 JB 1/4W
R1728	401 019 1109	CARBON 390 JB 1/4W
R1730	401 024 7004	CARBON 1K JA 1/6W
R1732	401 024 9305	CARBON 1.2K JA 1/6W
R1733	401 024 7707	CARBON 100K JA 1/6W
R1734	401 024 7707	CARBON 100K JA 1/6W
R1735	401 007 4709	CARBON 1.2K JA 1/2W
R1736	401 024 9701	CARBON 12K JA 1/6W
R1737	401 009 8705	CARBON 39 JB 1/2W
R1738	401 009 8705	CARBON 39 JB 1/2W
R1740	401 008 4500	CARBON 2.7 JB 1/2W
R1741	401 008 3800	CARBON 2.2 JB 1/2W
★ R1742	401 064 7507	OXIDE-MT 100 JA 2W
R1744	401 024 9305	CARBON 1.2K JA 1/6W
R1746	401 012 4503	CARBON 100 JA 1/4W
R1747	401 025 1605	CARBON 1.5K JA 1/6W
R1748	401 024 6700	CARBON 100 JA 1/6W
R1753	401 024 6700	CARBON 100 JA 1/6W
R1901	401 150 5905	MT-GLAZE 10K JA 1/10W
R1902	401 150 6209	MT-GLAZE 1K JA 1/10W
R1903	401 162 2800	MT-GLAZE 1.8K JA 1/10W
R1904	401 150 6100	MT-GLAZE 2.2K JA 1/10W
R1905	401 256 7605	MT-GLAZE 3.9K JA 1/10W
R1906	401 162 4101	MT-GLAZE 5.6K JA 1/10W
R1907	401 256 0408	MT-GLAZE 12K JA 1/10W
R1909	401 024 7004	CARBON 1K JA 1/6W
R1910	401 024 7004	CARBON 1K JA 1/6W
R3401	401 025 7409	CARBON 220 JA 1/6W
R3402	401 025 7409	CARBON 220 JA 1/6W
R3406	401 150 5806	MT-GLAZE 100K JA 1/10W
R3407	401 255 6005	MT-GLAZE 1M JA 1/10W
R3411	401 265 4008	MT-GLAZE 62K JA 1/10W
R3421	401 162 3104	MT-GLAZE 3.3K JA 1/10W
R3422	401 255 6401	MT-GLAZE 3K JA 1/10W
R3426	401 256 7605	MT-GLAZE 3.9K JA 1/10W
R3432	401 150 5905	MT-GLAZE 10K JA 1/10W
R3433	401 150 5905	MT-GLAZE 10K JA 1/10W
R3434	401 162 4002	MT-GLAZE 560 JA 1/10W
R3435	401 150 5806	MT-GLAZE 100K JA 1/10W
R3436	401 162 4002	MT-GLAZE 560 JA 1/10W
R3437	401 150 5806	MT-GLAZE 100K JA 1/10W
R3441	401 256 1405	MT-GLAZE 330K JA 1/10W
R3442	401 255 6500	MT-GLAZE 100 JA 1/10W
R3443	401 256 1405	MT-GLAZE 330K JA 1/10W
R3444	401 255 6500	MT-GLAZE 100 JA 1/10W
R3445	401 256 1405	MT-GLAZE 330K JA 1/10W

Schematic Location	Part No.	Description
R3447	401 256 1405	MT-GLAZE 330K JA 1/10W
R3451	401 256 1405	MT-GLAZE 330K JA 1/10W
R3452	401 255 6500	MT-GLAZE 100 JA 1/10W
R3453	401 256 1405	MT-GLAZE 330K JA 1/10W
R3454	401 255 6500	MT-GLAZE 100 JA 1/10W
R3456	401 255 6500	MT-GLAZE 100 JA 1/10W
R3458	401 255 6500	MT-GLAZE 100 JA 1/10W
R3461	401 150 6209	MT-GLAZE 1K JA 1/10W
R3462	401 256 0309	MT-GLAZE 820 JA 1/10W
★ R8864	401 065 4604	OXIDE-MT 12K JA 2W
R8865	401 014 6109	CARBON 150K JA 1/4W
R8866	401 025 8208	CARBON 22K JA 1/6W
R8867	401 024 6700	CARBON 100 JA 1/6W
R8868	401 027 5205	CARBON 680 JA 1/6W
R8869	401 026 9907	CARBON 4.7K JA 1/6W
R8870	401 024 7400	CARBON 10K JA 1/6W
R8871	401 027 2600	CARBON 5.6K JA 1/6W
R8872	401 024 7400	CARBON 10K JA 1/6W
R8873	401 025 1902	CARBON 15K JA 1/6W
R8874	401 027 8602	CARBON 8.2K JA 1/6W
R8875	401 025 1902	CARBON 15K JA 1/6W
R8876	401 023 1706	CARBON 820 JA 1/4W
R8877	401 026 7002	CARBON 3.9K JA 1/6W
SWITCHES		
SW1901	645 006 9673	SWITCH, PUSH (POWER)
	645 027 7382	SWITCH, PUSH (POWER)1
	645 052 2284	SWITCH, PUSH (POWER)
SW1902	645 006 9673	SWITCH, PUSH (VOL +)
	645 027 7382	SWITCH, PUSH (VOL +)
	645 052 2284	SWITCH, PUSH (VOL +)
SW1903	645 006 9673	SWITCH, PUSH (VOL -)
	645 027 7382	SWITCH, PUSH (VOL -)
	645 052 2284	SWITCH, PUSH (VOL -)
SW1904	645 006 9673	SWITCH, PUSH (CH ▲)
	645 027 7382	SWITCH, PUSH (CH ▲)
	645 052 2284	SWITCH, PUSH (CH ▲)
SW1905	645 006 9673	SWITCH, PUSH (CH ▼)
	645 027 7382	SWITCH, PUSH (CH ▼)
	645 052 2284	SWITCH, PUSH (CH ▼)
SW1906	645 006 9673	SWITCH, PUSH (MENU)
	645 027 7382	SWITCH, PUSH (MENU)
	645 052 2284	SWITCH, PUSH (MENU)
TRANSFORMERS		
T151	645 049 3775	TRANS, OSC 45.75MHZ
T401	610 000 1138	DRIVE TRANS
	610 223 1663	DRIVE TRANS
★ T402	645 058 8013	TRANS, FLYBACK
★ T601	645 056 7353	TRANS, POWER, PULSE
	645 059 3086	TRANS, POWER, PULSE
	645 053 1163	TRANS, PULSE

Schematic Location	Part No.	Description
CRYSTAL/FILTERS		
X141	421 008 9008	SAW F TSF5235P
X161	610 015 3059	TRAP, CERAMIC 4.5MHZ
	645 041 1618	TRAP CERAMIC 4.5MHZ
	610 012 0655	CRYSTAL OSCILLATOR
X251	610 204 4195	CRYSTAL OSCILLATOR
	610 245 9746	CRYSTAL OSCILLATOR
	645 026 8434	OSC, CRYSTAL 8.000MHZ
X801		
MISCELLANEOUS		
A100	610 303 0678	ASSY, PWB, MAIN G7ZCM
★ A101	645 052 6084	TUNER, U/V
A400	610 303 5765	ASSY, PWB, PCC G7ZCM
A700	610 303 0692	ASSY, PWB, CRT G7ZCM
A1000	610 303 0722	ASSY, PWB, AV G7ZCM
A1901	645 047 6228	UNIT, REMOCON RECEIVER
★ F601	423 007 1601	FUSE 125V 4A
	423 007 1809	FUSE 125V 4A
	423 018 8101	FUSE 125V 4A
	423 029 8008	FUSE 125V 4A
	645 000 5077	HOLDER, FUSE
F601A	645 016 0479	HOLDER, FUSE
	645 000 5077	HOLDER, FUSE
	645 016 0479	HOLDER, FUSE
★ K701	645 045 3939	SOCKET, CRT 8P
	645 045 3960	SOCKET, CRT 8P
K1001	645 052 6886	TERMINAL, BOARD
	652 001 2639	JACK, RCA-9
K1002	645 052 6879	JACK, RCA-4(6-2)
	K1051	SOCKET, DIN 4PX2
★ PS601	408 046 5209	TH PTDA1BF3R0Q100
★ Q901	414 012 0703	CRT A80ERF042X13
★ RL601	645 011 2713	RELAY
	645 015 8629	RELAY
	645 052 5933	RELAY
SP901	645 013 6306	SPEAKER, 8
	SP902	SPEAKER, 8
★ W601	645 028 1600	CORD, POWER-2.05MK
	645 056 9555	CORD, POWER-2.055MK
★ W901	610 299 3745	ASSY, WIRE GND CONNECTOR

CABINET PARTS LIST



CABINET PARTS LIST

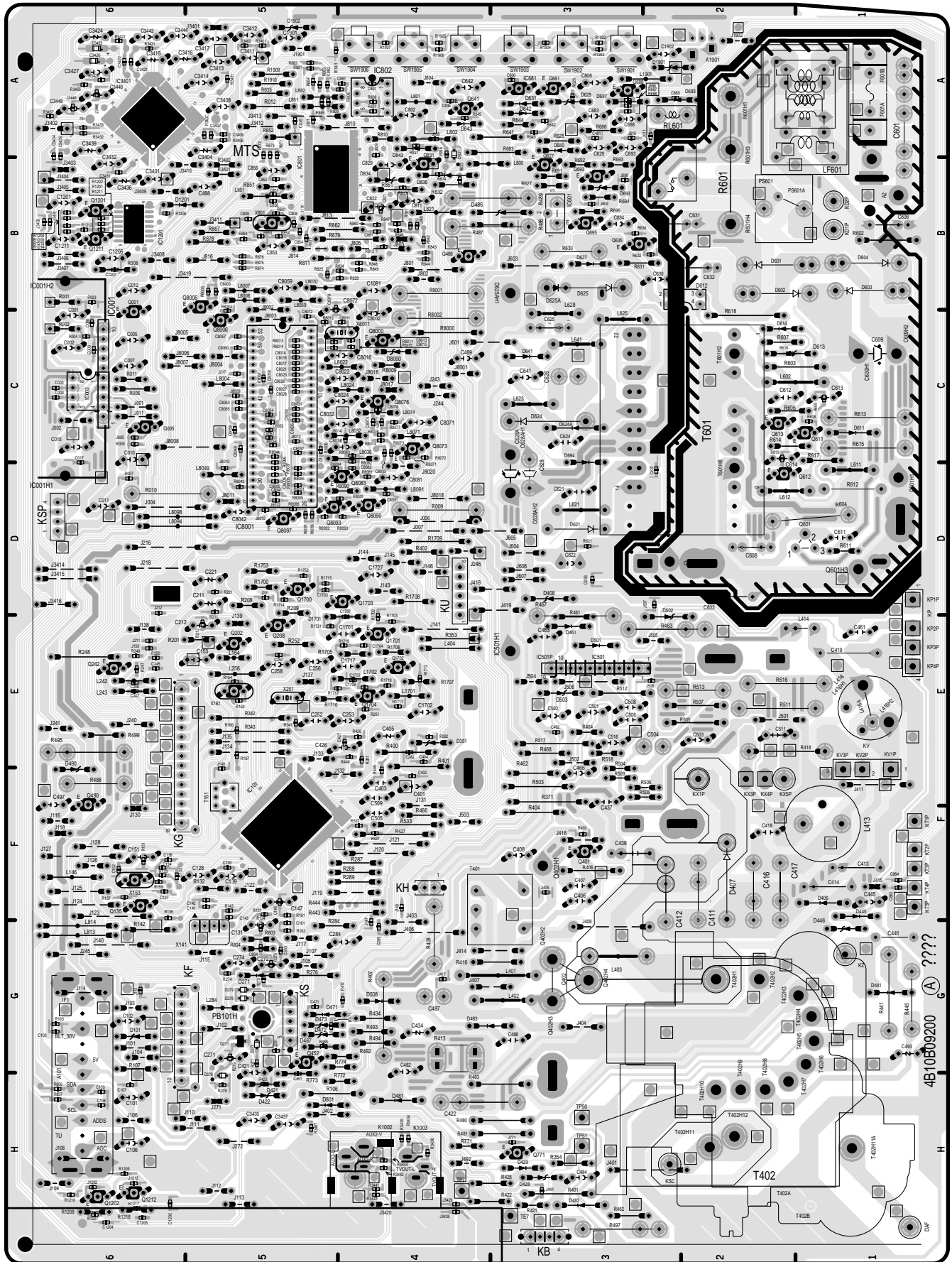
KEY NO.	PARTS NO.	DESCRIPTION
1	610 299 1710	CABINET FRONT ASSY
2	610 268 9648	CRT SPACER 2.0 MM (BTM)
	610 268 9662	CRT SPACER 2.5MM (TOP)
3	412 053 3905	CRT MTG SCREW (4 USED)
4	610 299 1727	CABINET BACK
5	412 064 4304	SCREW 4X14 (8 USED)
6	411 026 2303	SCREW 3X10 (3 USED)
7	610 299 3950	DEC AV SHEET
8	610 299 3875	BUTTON UNIT
9	610 267 0851	CAP RC
10	610 299 3936	DEC INLAY
11	610 293 2560	SANYO BADGE
12	610 299 5527	DEC SHEET

ACCESSORY PARTS LIST

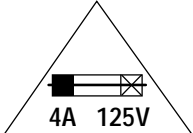
KEY NO.	PARTS NO.	DESCRIPTION
	610 310 2900	OWNER'S MANUAL
	645 061 0165	RC TRANSMITTER
OR	645 058 8136	RC TRANSMITTER
	610 298 2398	RC BATTERY COVER

COMPONENT AND TESTPOINT LOCATIONS

MAIN BOARD FOIL SIDE



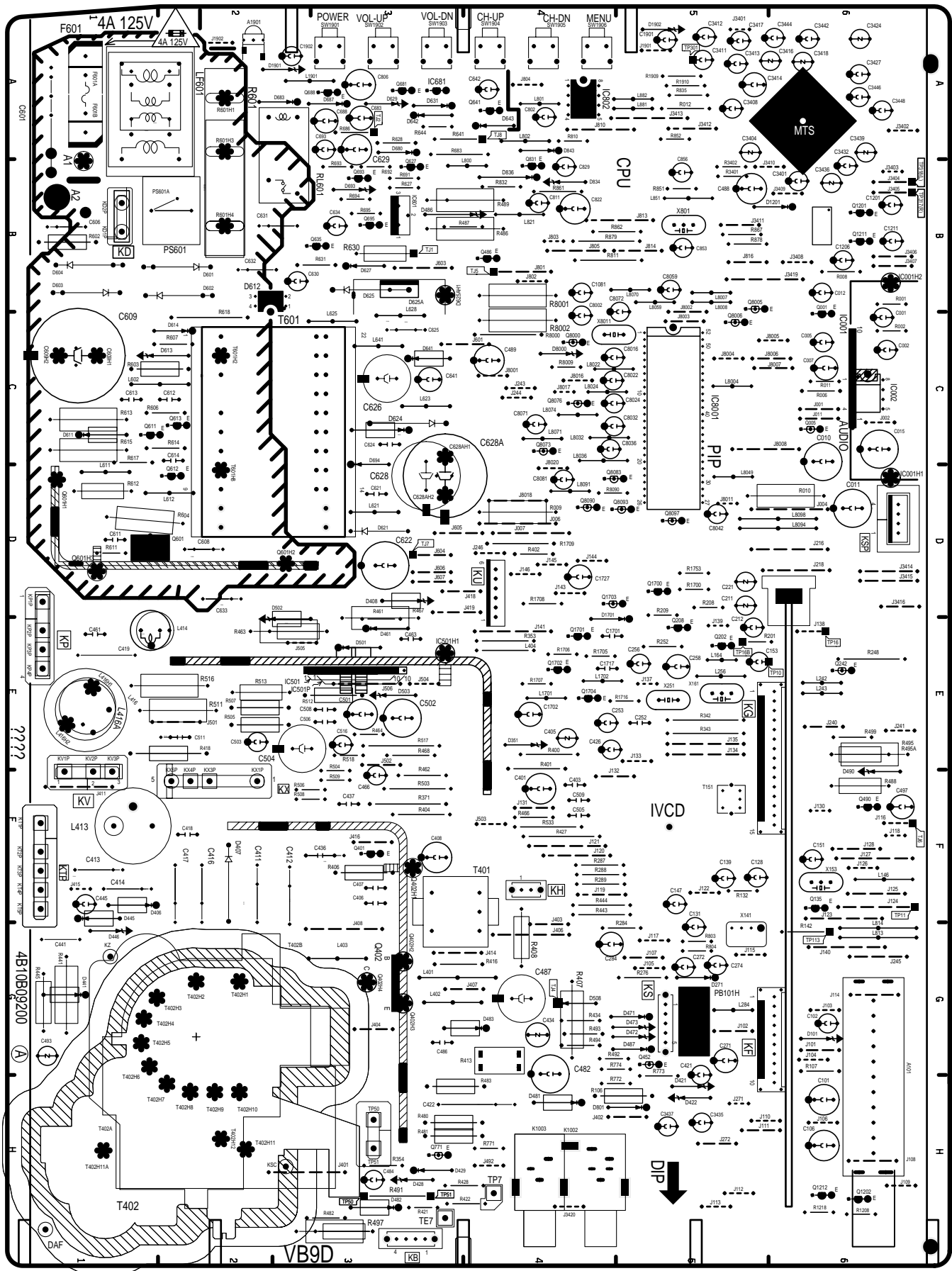
COMPONENT AND TESTPOINT LOCATIONS (Cont.)

CAUTION  4A 125V	<p>FOR CONTINUED PROTECTION AGAINST A RISK OF FIRE, REPLACE ONLY WITH THE SAME TYPE 4A, 125V FUSE.</p> <p>ATTENTION : POUR MAINTENIR LA PROTECTION CONTRE LES RISQUES D' INCENDIE UTILISER UN FUSIBLE DE RECHANGE DE MEME TYPE 4A, 125V.</p>
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MAIN BOARD COMPONENTS AND TEST POINTS GRID LOCATIONS

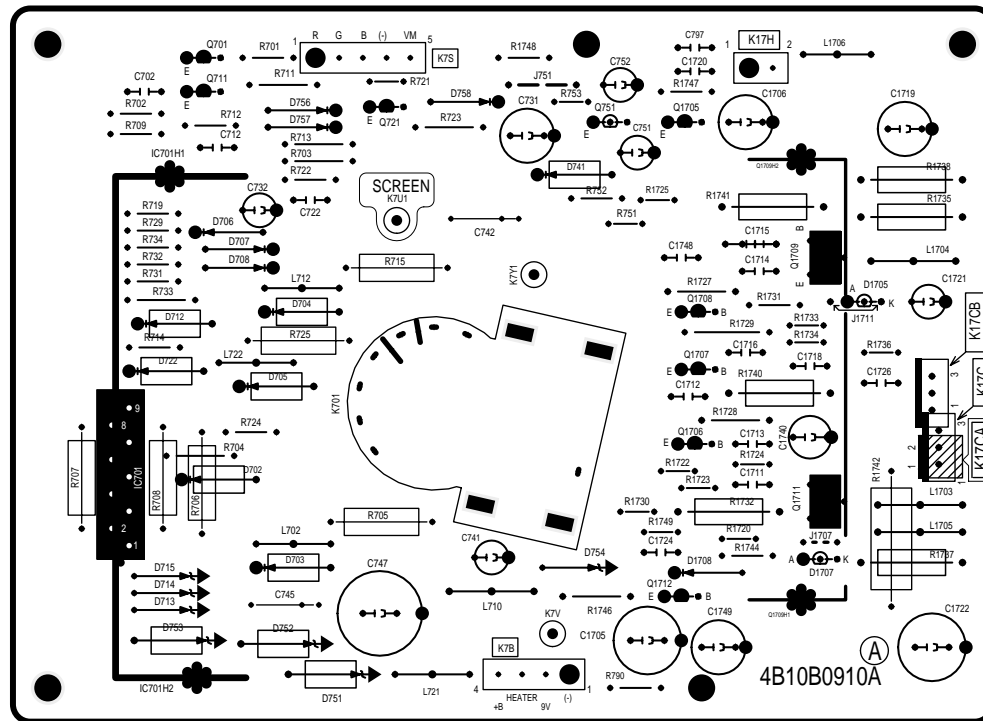
Part	Loc.	Part	Loc.	Part	Loc.
D429	H4	Q401	F3	Q1211	B6
D508	G4	Q402	G3	Q1212	H6
D612	B2	Q486	B4	Q1700	D5
D643	A4	Q490	F6	Q1701	E4
IC001	C6	Q601	D2	Q1702	E4
IC101	F5	Q611	C1	Q1704	E4
IC501	E3	Q612	D2	R513	E2
IC601	B3	Q613	C2	TE7	H3
IC681	A3	Q627	B3	TP7	H4
IC801	B5	Q635	B3	TJ1	B3
IC802	A4	Q641	A4	TJ4	G4
IC1201	B6	Q681	A3	TJ6	F6
IC3401	A6	Q688	A3	TP16	E6
Q001	C6	Q693	B3	TP50	H3
Q135	F6	Q695	B3	TP51	H3
Q202	E5	Q831	B4	TP317	B6
Q208	E5	Q1201	B6	TP318	B6
Q271	G5	Q1202	H6	T151	F5

MAIN BOARD PARTS SIDE



COMPONENT AND TESTPOINT LOCATIONS (Cont.)

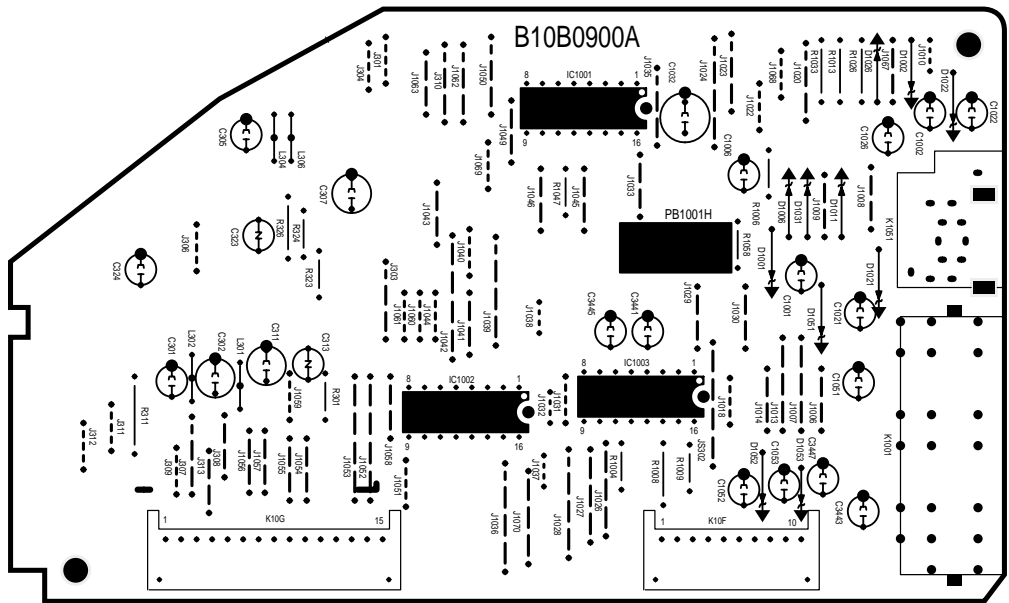
PICTURE TUBE SOCKET BOARD



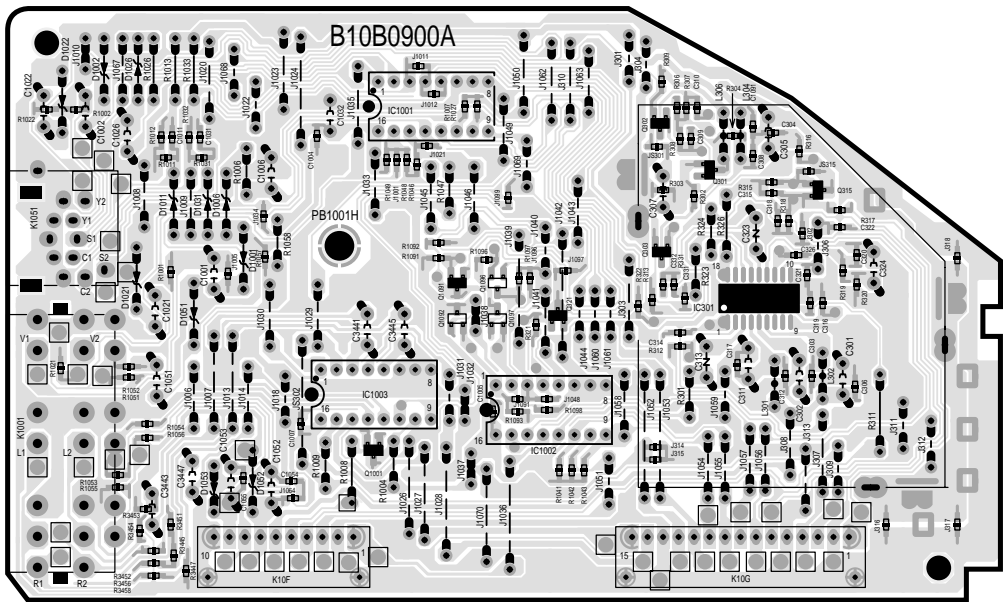
PIC TUBE SOCKET BOARD COMPONENTS

Part
IC701
Q701
Q711
Q721
Q1705
Q1706
Q1707
Q1708
Q1709
Q1711
Q1712

AV BOARD PARTS SIDE



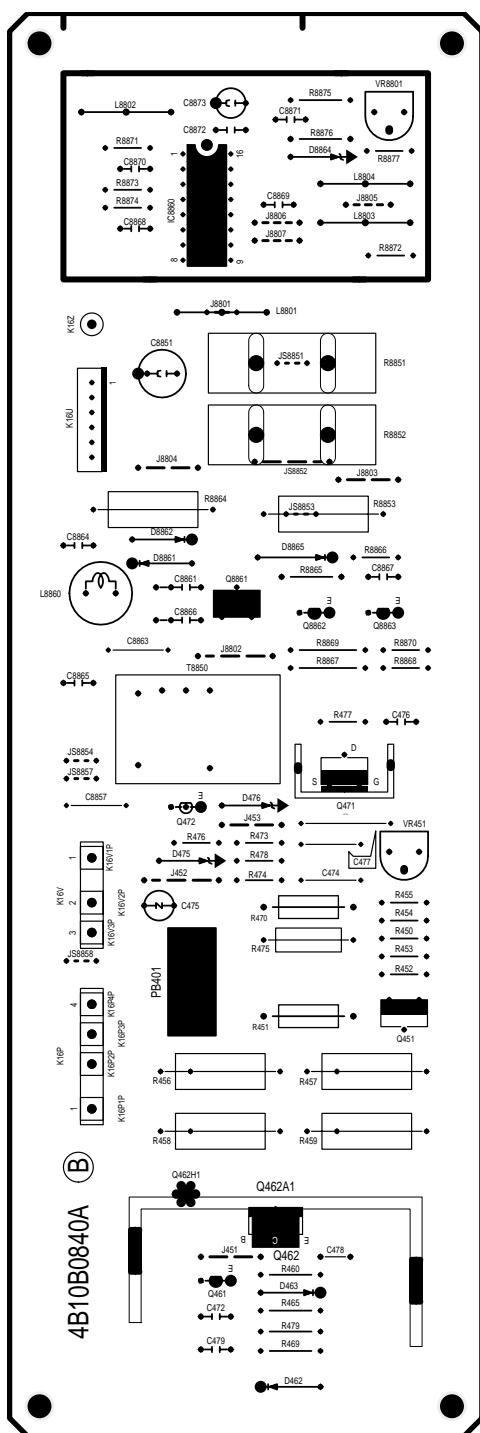
AV BOARD FOIL SIDE



AV BOARD COMPONENTS

Part	
IC301	Q302
IC1001	Q303
IC1002	Q315
IC1003	Q321
Q301	Q1001

PCC BOARD PARTS SIDE



PCC BOARD COMPONENTS

Part
IC8860
Q461
Q462
Q8861
Q8862
Q8863

For parts or service contact


SANYO Fisher Service Corporation
21605 Plummer Street
Chatsworth, CA 91311 (U.S.A.)

300 Applewood Crescent,
Concord, Ontario L4K 5C7 (CANADA)

September / 2003 / 2000 SMC

Printed in U.S.A.

SCHEMATIC DIAGRAMS

- NOTES ON SCHEMATIC DIAGRAMS
1. All resistance values in ohms K=1,000 M=1,000,000.
 2. Unless otherwise noted on schematic, all capacitor values less than 1 are expressed in µF (Micro Farad), and the values more than 1 are in pF.
 3. Unless otherwise noted on schematic, voltage reading taken with VOM from point indicated to chassis ground. Voltage reading taken using color-bar signal VHF channel 5, all controls at normal. Line voltage at 120 volts. Some voltages may vary with signal strength.
 4. Waveforms were taken with color-bar signal and controls set for normal picture. Waveforms marked with an * may vary with signal strength.
 5. The Symbol  indicates a fusible resistor, which protects the circuit from possible short circuits.

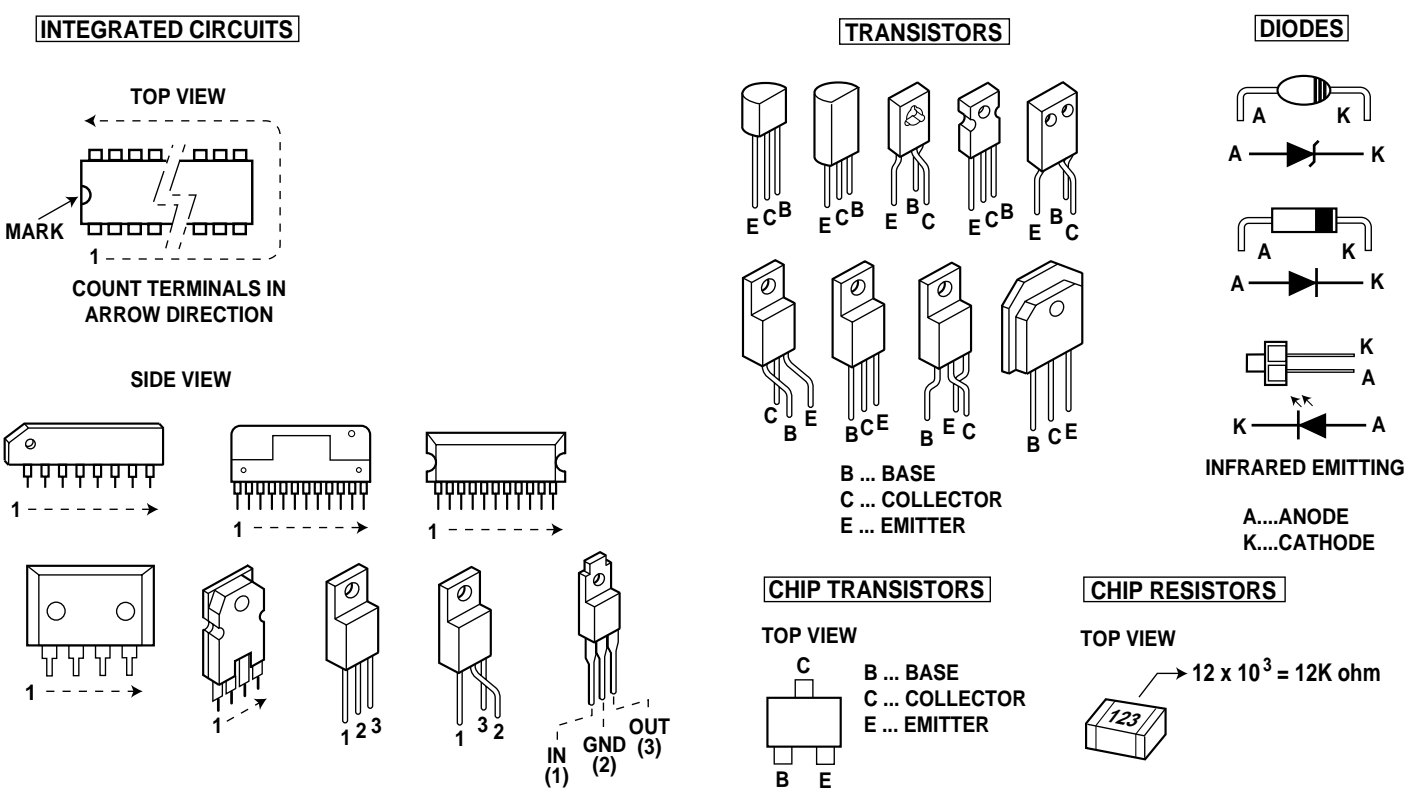
- SERVICE NOTES:
1. When replacing parts on circuit boards, clamp the lead wires to terminals before soldering.
 2. When replacing high wattage resistors on circuit board, keep the resistor body 10 mm (3/8) from circuit board.
 3. Keep wires away from high voltage and high temperature components.

PRODUCT SAFETY NOTICE

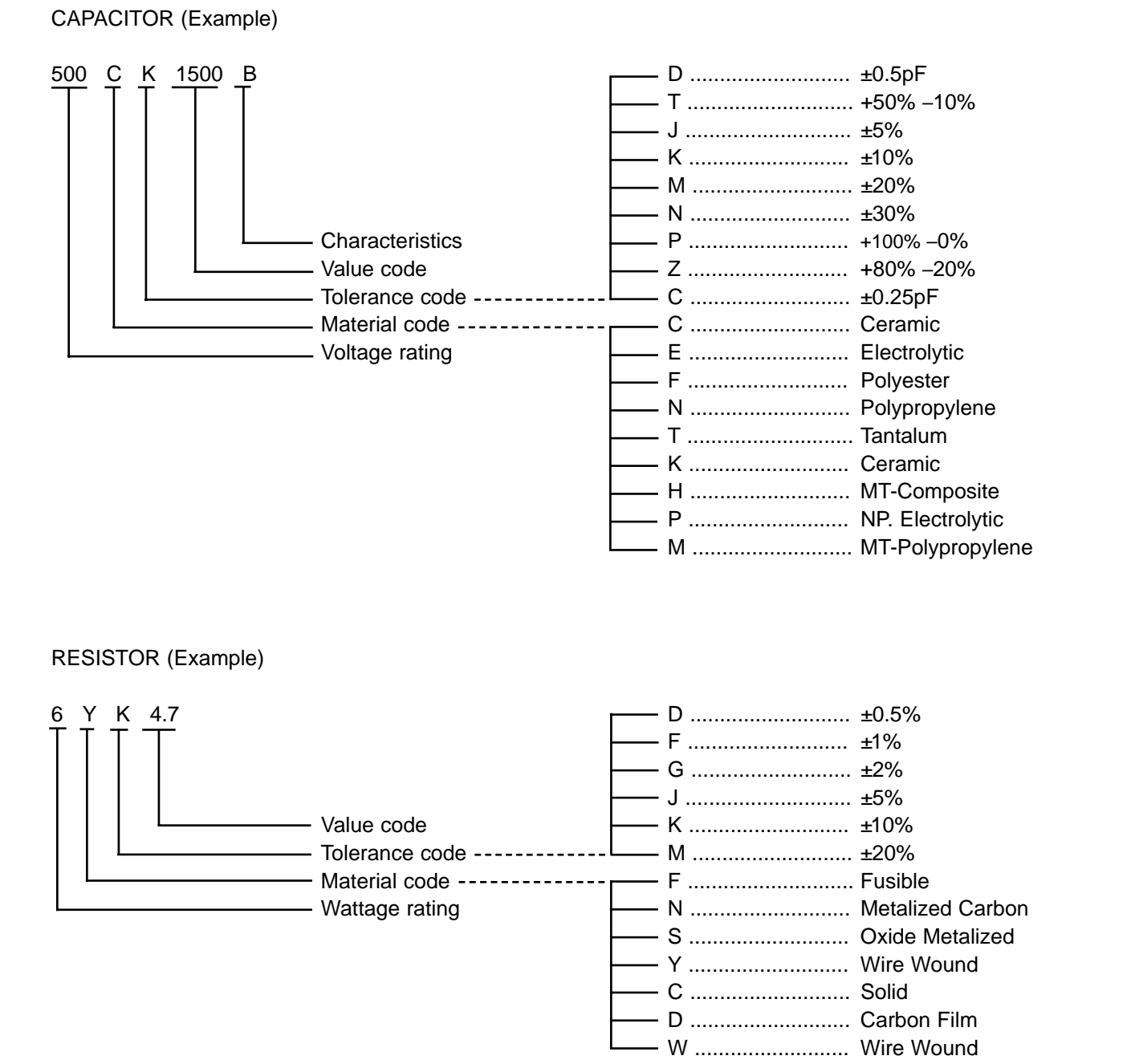
THE COMPONENTS DESIGNATED BY A STAR (*) ON THIS SCHEMATIC DIAGRAM DESIGNATE COMPONENTS WHOSE VALUES ARE OF SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. SHOULD ANY COMPONENT DESIGNATED BY A STAR NEED TO BE REPLACED, USE ONLY THE PART DESIGNATED IN THE PARTS LIST. DO NOT DEVIATE FROM THE RESISTANCE, WATTAGE AND VOLTAGE RATINGS SHOWN.

X-RADIATION WARNING NOTE

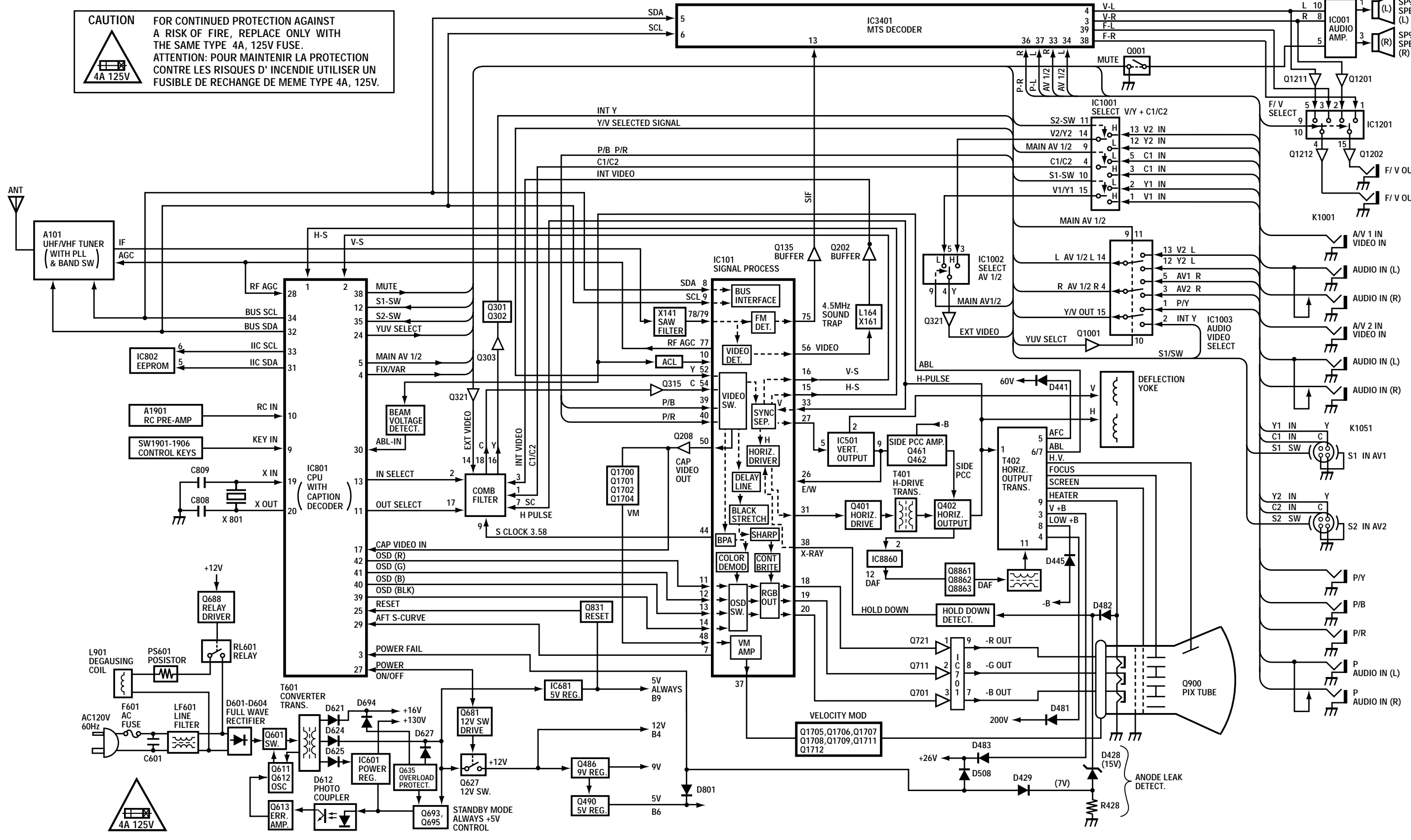
THIS TV CONTAINS CRITICAL PARTS TO PROTECT AGAINST X-RADIATION. NOMINAL 2ND ANODE VOLTAGE IS 33.5KV AT ZERO BEAM CURRENT AT 120 VOLTS AC LINE, AND MUST NOT EXCEED 35.6KV UNDER ANY OPERATING CONDITION. SEE HIGH VOLTAGE CHECK ON PAGE 9.



CAPACITOR AND RESISTOR CODE CHART



BLOCK DIAGRAM



VOLTAGE CHARTS

NOTE: Voltages were measured using color-bar signal and the controls set for normal picture.

Device/Pin #	Volts/Mode	
D612-1	POWER ON: 28.7	POWER OFF: 9.2
D612-2	POWER ON: 27.9	POWER OFF: 9.1
D612-3	POWER ON: 1.3	POWER OFF: 0.6
D612-4	POWER ON: 10.2	POWER OFF: 1.9
IC001-1	7.7	
IC001-2	GND	
IC001-3	7.6	
IC001-4	15.6	
IC001-5	7.7	
IC001-6	10.7	
IC001-7	2.1	
IC001-8	1.4	
IC001-9	GND	
IC001-10	1.4	
IC001-11	GND	
IC001-12	GND	
IC001-13	GND	
IC001-14	GND	
IC001-15	5.1	
IC001-16	3.7	
IC001-17	2.4	
IC001-18	3.7	
IC001-19	3.9	
IC001-20	3.7	
IC001-21	0	
IC001-22	0	
IC001-23	0	
IC001-24	0	
IC001-25	3.9	
IC001-26	8.3	
IC001-27	2.5	
IC001-28	2.5	
IC001-29	2.5	
IC001-30	2.5	
IC001-31	0	
IC001-32	0	
IC001-33	0	
IC001-34	0	
IC001-35	3.9	
IC001-36	4.6	
IC001-37	2.4	
IC001-38	2.5	
IC001-39	5.2	
IC001-40	2.8	
IC001-41	0.5	
IC001-42	GND	
IC001-43	1.1	
IC001-44	1.7	
IC001-45	GND	
IC001-46	GND	
IC001-47	2.0	
IC001-48	0	
IC001-49	0.1	
IC001-50	0.1	
IC001-51	GND	

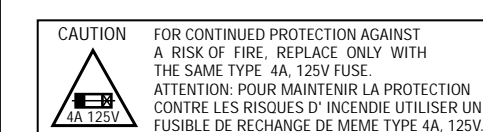
Device/Pin #	Volts/Mode	
IC101-42	GND	
IC101-43	GND	
IC101-44	2.9	
IC101-45	3.6	
IC101-46	2.9	
IC101-47	1.9	
IC101-48	2.6	
IC101-49	GND	
IC101-50	1.9	
IC101-51	GND	
IC101-52	2.7	
IC101-53	5.1	
IC101-54	2.6	
IC101-55	2.7	
IC101-56	2.4	
IC101-57	GND	
IC101-58	2.6	
IC101-59	4.5	
IC101-60	4.5	
IC101-61	GND	
IC101-62	GND	
IC101-63	GND	
IC101-64	GND	
IC101-65	2.4	
IC101-66	0	
IC101-67	1.9	
IC101-68	0	
IC101-69	3.2	
IC101-70	GND	
IC101-71	2.0	
IC101-72	GND	
IC101-73	3.8	
IC101-74	9.0	
IC101-75	3.9	
IC101-76	2.5	
IC101-77	2.0	
IC101-78	2.3	
IC101-79	3.0	
IC101-80	GND	
IC101-81	2.6	
IC101-82	4.8	
IC101-83	2.8	
IC101-84	5.1	
IC101-85	0	
IC101-86	5.1	
IC101-87	4.1	
IC101-88	2.3	
IC101-89	GND	
IC101-90	GND	
IC101-91	0.9	
IC101-92	9.1	
IC101-93	3.5	
IC101-94	2.9	
IC101-95	GND	
IC101-96	GND	
IC101-97	2.6	
IC101-98	0	
IC101-99	0.1	
IC101-100	0.1	
IC101-41	GND	

Device/Pin #	Volts/Mode	
IC501-1	GND	
IC501-2	13.7	
IC501-3	27.1	
IC501-4	2.9	
IC501-5	2.9	
IC501-6	27.2	
IC501-7	2.9	
IC501-8	2.9	
IC501-9	2.9	
IC501-10	10.3	
IC601-1	POWER ON: 135.0	POWER OFF: 92.5
IC601-2	POWER ON: 31.1	POWER OFF: 9.8
IC601-3	GND	
IC681-1	POWER ON: 11.6	POWER OFF: 7.3
IC681-2	GND	
IC681-3	POWER ON: 5.0	POWER OFF: 5.0
IC701-1	1.9	
IC701-2	1.8	
IC701-3	1.9	
IC701-4	GND	
IC701-5	4.3	
IC701-6	210	
IC701-7	185	
IC701-8	164	
IC701-9	149	
IC801-1	4.0	
IC801-2	3.9	
IC801-3	4.9	
IC801-4	0.4	
IC801-5	0	
IC801-6	0	
IC801-7	0	
IC801-8	0	
IC801-9	0	
IC801-10	4.9	
IC801-11	0	
IC801-12	4.8	
IC801-13	4.9	
IC801-14	4.9	
IC801-15	1.9	
IC801-16	0.2	
IC801-17	2.1	
IC801-18	GND	
IC801-19	2.2	
IC801-20	2.0	
IC801-21	GND	
IC801-22	4.9	
IC801-23	0.2	
IC801-24	4.9	
IC801-25	4.8	
IC801-26	4.9	
IC801-27	POWER ON: 4.9	POWER OFF: 0
IC801-28	2.3	
IC801-29	2.6	

Device/Pin #	Volts/Mode	
IC801-30	0	
IC801-31	4.9	
IC801-32	3.6	
IC801-33	4.9	
IC801-34	3.7	
IC801-35	4.8	
IC801-36	4.9	
IC801-37	4.9	
IC801-38	0	
IC801-39	0	
IC801-40	0	
IC801-41	0	
IC801-42	0	
IC802-1	GND	
IC802-2	GND	
IC802-3	GND	
IC802-4	GND	
IC802-5	4.9	
IC802-6	4.9	
IC802-7	GND	
IC802-8	4.9	
IC802-9	3.9	
IC802-10	0.8	
IC802-11	0.2	
IC802-12	6.5	
IC802-13	6.5	
IC802-14	GND	
IC802-15	GND	
IC802-16	GND	
IC802-17	GND	
IC802-18	GND	
IC802-19	GND	
IC802-20	GND	
IC802-21	GND	
IC802-22	GND	
IC802-23	GND	
IC802-24	GND	
IC802-25	GND	
IC802-26	GND	
IC802-27	GND	
IC802-28	GND	
IC802-29	GND	
IC802-30	GND	
IC802-31	GND	
IC802-32	GND	
IC802-33	GND	
IC802-34	GND	
IC802-35	GND	
IC802-36	GND	
IC802-37	GND	
IC802-38	GND	
IC802-39	GND	
IC802-40	GND	
IC802-41	GND	
IC802-42	GND	
IC802-43	GND	
IC802-44	GND	
IC802-45	GND	
IC802-46	GND	
IC802-47	GND	
IC802-48	GND	
IC802-49	GND	
IC802-50	GND	
IC802-51	GND	
IC802-52	GND	
IC802-53	GND	
IC802-54	GND	
IC802-55	GND	
IC802-56	GND	
IC802-57	GND	
IC802-58	GND	
IC802-59	GND	
IC802-60	GND	
IC802-61	GND	
IC802-62	GND	
IC802-63	GND	
IC802-64	GND	
IC802-65	GND	
IC802-66	GND	
IC802-67	GND	
IC802-68	GND	
IC802-69	GND	
IC802-70	GND	
IC802-71	GND	
IC802-72	GND	
IC802-73	GND	
IC802-74	GND	
IC802-75	GND	
IC802-76	GND	
IC802-77	GND	
IC802-78	GND	
IC802-79	GND	
IC802-80	GND	
IC802-81	GND	
IC802-82	GND	
IC802-83	GND	
IC802-84	GND	
IC802-85	GND	
IC802-86	GND	
IC802-87	GND	
IC802-88	GND	
IC802-89	GND	
IC802-90	GND	
IC802-91	GND	
IC802-92	GND	
IC802-93	GND	
IC802-94	GND	
IC802-95	GND	
IC802-96	GND	
IC802-97	GND	
IC802-98	GND	
IC802-99	GND	
IC802-100	GND	

Device/Pin #	Volts/Mode	
IC1003-7	GND	
IC1003-8	GND	
IC1003-9	0	
IC1003-10	0	
IC1003-11	0	
IC1003-12	4.1	
IC1003-13	0.4	
IC1003-14	4.1	
IC1003-15	2.0	
IC1003-16	9.1	
IC1003-17	4.1	
IC1003-18	4.6	
IC1003-19	4.1	
IC1003-20	4.1	
IC1003-21	4.6	
IC1003-22	4.1	
IC1003-23	4.1	
IC1003-24	4.1	
IC1003-25	2.2	
IC1003-26	9.1	
IC1003-27	9.4	
IC1003-28	9.4	
IC1003-29	9.4	
IC1003-30	9.4	
IC1003-31	9.4	
IC1003-32	9.4	
IC1003-33	9.4	
IC1003-34	9.4	
IC1003-35	9.4	
IC1003-36	9.4	
IC1003-37	9.4	
IC1003-38	9.4	
IC1003-39	9.4	
IC1003-40	9.4	
IC1003-41	9.4	
IC1003-42	9.4	
IC1003-43	9.4	
IC1003-44	9.4	
IC1003-45	9.4	
IC1003-46	9.4	
IC1003-47	9.4	
IC1003-48	9.4	
IC1003-49	9.4	
IC1003-50	9.4	
IC1003-51	9.4	
IC1003-52	9.4	
IC1003-53	9.4	
IC1003-54	9.4	
IC1003-55	9.4	
IC1003-56	9.4	
IC1003-57	9.4	
IC1003-58	9.4	
IC1003-59	9.4	
IC1003-60	9.4	
IC1003-61	9.4	
IC1003-62	9.4	
IC1003-63	9.4	
IC1003-64	9.4	
IC1003-65	9.4	
IC1003-66	9.4	
IC1003-67	9.4	
IC1003-68	9.4	
IC1003-69	9.4	
IC1003-70	9.4	
IC1003-71	9.4	
IC1003-72	9.4	
IC1003-73	9.4	
IC1003-74	9.4	
IC1003-75	9.4	
IC1003-76	9.4	
IC1003-77	9.4	
IC1003-78	9.4	
IC1003-79	9.4	
IC1003-80	9.4	
IC1003-81	9.4	
IC1003-82	9.4	
IC1003-83	9.4	
IC1003-84	9.4	
IC1003-85	9.4	
IC1003-86	9.4	
IC1003-87	9.4	
IC1003-88	9.4	
IC1003-89	9.4	
IC1003-90	9.4	
IC1003-91	9.4	
IC1003-92	9.4	
IC1003-93	9.4	
IC1003-94	9.4	
IC1003-95	9.4	
IC1003-96	9.4	
IC1003-97	9.4	
IC1003-98	9.4	
IC1003-99	9.4	
IC1003-100	9.4	

Device/Pin #	Volts/Mode	
IC3401-34	4.1	
IC3401-35	0	
IC3401-36	4.1	
IC3401-37	4.1	
IC3401-38	4.1	
IC3401-39	4.1	
IC3401-40	4.1	
IC3401-41	4.1	
IC3401-42	GND	
IC3401-43	4.1	
IC3401-44	4.1	
IC3401-45	4.2	
IC3401-46	GND	
IC3401-47	4.1	
IC3401-48	4.1	
IC8860-1	GND	
IC8860-2	15.5	
IC8860-3	1.0	
IC8860-4	0	
IC8860-5	1.2	
IC8860-6	0	
IC8860-7	1.7	
IC8860-8	GND	
IC8860-9	GND	
IC8860-10	1.2	
IC8860-11	2.2	
IC8860-12	1.3	
IC8860-13	1.0	
IC8860-14	0	
IC8860-15	1.7	
IC8860-16	2.2	
Q001-B	POWER ON: 7.6	POWER OFF: 0
Q001-C	POWER ON: 0	POWER OFF: 8.6
Q001-E	GND	
Q135-B	3.9	
Q135-C	9.0	
Q135-D	4.9	
Q135-E	4.1	



Notice



☐ CORRECTION
 ☒ PRODUCTION CHANGE
☐ SERVICE FLASH
 ☐ ADD INFORMATION

FILE NO.

REVISION 1

Please add this notice to the Service Manual listed below.

Category: COLOR TELEVISION	Date: December / 15 / 2002
Model: DS32920	Effective from: Chassis No. 32920-01
Destination: U.S.A. / CANADA	REF: No. SM780081

NOTE: Match the Chassis No. on the unit's back cover with the Chassis No. in the Service Manual. **If the Service Manual Chassis No. does not match the unit's**, additional Service Literature is required. This chassis is similar to Chassis No. 32920-00. Only the **Difference** Service Information is given in this manual. For detailed Service Information, refer to the **Original** Service Manual and **Notices** for Chassis No. 32920-00 used in Model DS32920 (SM780081).

1. IN THE CHASSIS ELECTRICAL PARTS LIST

The reason for change.

A : Misprint B : Quality Reliability C : Standardization
 D : Design E : Add as a possible sub F : Schematic location change
 G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 13, Chassis Electrical Parts List	★C411	Old	403 343 8403 404 077 4907	MT-POLYPRO 8200P H 1.5K MT-POLYPRO 8200P H 1.5K	1	NO	D
		NEW	404 076 5509 403 353 4204	MT-POLYPRO 6500P H 1.5K MT-POLYPRO 6500P H 1.5K	1	NO	
	★C412	Old	403 343 8502 404 077 5003	MT-POLYPRO 8600P H 1.5K MT-POLYPRO 8600P H 1.5K	1	NO	D
		NEW	403 343 7901 404 077 4402	MT-POLYPRO 7200P H 1.5K MT-POLYPRO 7200P H 1.5K	1	NO	
	★C416	Old	403 349 3105 403 372 6203 403 376 2706	MT-POLYPRO 0.12U M 250V MT-POLYPRO 0.12U J 250V MT-POLYPRO 0.12U J 250V	1	NO	D
		New	403 358 7200 403 375 0604 403 372 6302	MT-POLYPRO 0.15U M 250V MT-POLYPRO 0.15U J 250V MT-POLYPRO 0.15U J 250V	1	NO	
	★C417	Old	403 349 3105 403 372 6203 403 376 2706	MT-POLYPRO 0.12U M 250V MT-POLYPRO 0.12U J 250V MT-POLYPRO 0.12U J 250V	1	NO	D
		New	403 346 6723 403 372 1604 403 372 6401	MT-POLYPRO 0.18U M 250V MT-POLYPRO 0.18U J 250V MT-POLYPRO 0.18U J 250V	1	NO	

1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint B : Quality Reliability C : Standardization
D : Design E : Add as a possible sub F : Schematic location change
G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 13 Chassis Electrical Parts List	C441	Old	403 082 8801	POLYPRO 0.027U J 200V	1	NO	D
		New	403 082 7705	POLYPRO 0.018U J 200V	1	NO	
	C474	Old	403 180 1605	MT--POLYEST 0.1U K	1	NO	D
		New		NOT USED	0	NO	
	C475	Old	403 152 4702	NP-ELECT 10U M 16V	1	NO	D
		New		NOT USED	0	NO	
	C476	Old	403 075 7101	CERAMIC 1000P K 500V	1	NO	D
		New		NOT USED	0	NO	
	★C477	Old	403 346 7225 403 372 7002 403 376 4700	MT-POLYPRO 0.33U J 250V MT-POLYPRO 0.33U J 250V MT-POLYPRO 0.33U J 250V	1	NO	D
		New		NOT USED	0	NO	
Page 15, Chassis Electrical Parts List	D475	Old	407 063 8200	ZENER DIODE MTZJ10A (10V)	1	NO	D
		New		NOT USED	0	NO	
	D476	Old	407 054 0008 407 099 6102	ZENER DIODE RD10EB2 (10V) ZENER DIODE MTZJ10B (10V)	1	NO	D
		New		NOT USED	0	NO	
Page 17, Chassis Electrical Parts List	★L413	Old	645 053 1170	COIL, LINEARITY	1	NO	D
		New	645 029 8042	COIL, LINEARITY	1	NO	
Page 18, Chassis Electrical Parts List	Q471	Old	406 012 1408	TR 2SK2010-CTV-YA14	1	NO	D
		New		NOT USED	0	NO	
	Q472	Old	405 011 8401 405 011 8500 405 011 8609	TR-2SC1740S-S TR-2SC1740S-R TR 2SC1740S-Q	1	NO	D
		New		NOT USED	0	NO	
Page 22, Chassis Electrical Parts List	R465	Old	401 153 6602	MT-FILM 68K FA 1/6W	1	NO	D
		New	401 187 3806	MT-FILM 82K FA 1/6W	0	NO	
	R470	Old	401 007 2309	CARBON 100K JA 1/2W	1	NO	D
		New		NOT USED	0	NO	
	R473	Old	401 027 8602	CARBON 8.2K JA 1/6W	1	NO	D
		New		NOT USED	0	NO	

1. IN THE CHASSIS ELECTRICAL PARTS LIST (Continued)

The reason for change.

A : Misprint B : Quality Reliability C : Standardization
D : Design E : Add as a possible sub F : Schematic location change
G : Purchasing Request

Page & Section	Schematic Location		Part No.	Description	Q'ty	Interchangeability	Reason
Page 22, Chassis Electrical Parts List	R474	Old	401 027 0507	CARBON 470K JA 1/6W	1	NO	D
		New		NOT USED	0	NO	
	★R475	Old	401 062 3006	OXIDE-MT 47K JA 1W	1	NO	D
		New		NOT USED	0	NO	
	R476	Old	401 026 1000	CARBON 2.7K JA 1/6W	1	NO	D
		New		NOT USED	0	NO	
	R477	Old	401 024 6700	CARBON 100 JA 1/6W	1	NO	D
		New		NOT USED	0	NO	
	R478	Old	401 024 7004	CARBON 1K JA 1/6W	1	NO	D
		New		NOT USED	0	NO	
	R482	Old	401 021 0701	CARBON 56 JA 1/4W	1	NO	D
		New	401 019 9600	CARBON 47 JA 1/4W	1	NO	
	R509	Old	401 053 0007	MT-FILM 18K FA 1/6W	1	NO	D
		New	401 052 6802	MT-FILM 10K FA 1/6W	1	NO	
Page 25, Chassis Electrical Parts List	A100	Old	610 298 8888	ASSY, PWB, MAIN	1	NO	D
		New	610 304 7256	ASSY, PWB, MAIN	1	NO	
	A400	Old	610 298 8925	ASSY, PWB, PCC	1	NO	D
		New	610 304 7270	ASSY, PWB, PCC	1	NO	
	A700	Old	610 299 3639	ASSY, PWB, CRT	1	NO	D
		New	610 304 7287	ASSY, PWB, CRT	1	NO	
	★Q900	Old	414 011 7901	CRT A80ERF031X13	1	NO	D
		New	414 012 0703	CRT A80ERF042X13	1	NO	

For parts or service contact
SANYO Fisher Service Corporation
21605 Plummer Street
Chatsworth, CA 91311 (U.S.A.)
300 Applewood Crescent,
Concord, Ontario L4K 5C7 (CANADA)